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ISSUE 155 NOVEMBER 2014

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EDITORIAL

THE ABUSE STOPS NOW

I'M FED UP of seeing a fresh wave of opinion pieces about GamerGate every time I log on to my computer. It goes without saying the current wave of harassment is abhorrent and should be widely condemned. The question is, what are we going to do about it?

Frankly the industry's response to the last two months – and it's shameful that it has dragged on for that long – has been unacceptable. By mid-September, it was abundantly clear that our usual tactic of 'keep quiet and maybe they will go away' wouldn't work. It's only recently that we've seen official responses, but even those have been underwhelming.

Granted, there's the #gamediversity petition signed by hundreds of Swedish devs, and trade bodies like the ESA and EGDF have released the usual 'we don't condone this behaviour' statements, but these are getting lost in the noise. These internet bullies – even this is a tame word for what they are – think they're winning because they're louder than us, but we have far more influential voices on our side. Let's use them.

In preparing our analysis on the effects this tirade of abuse is having on developers, multiple publishers hid behind trade bodies when questioned. And female developers were, understandably, wary of contributing in case they opened themselves up to similar attacks. One contributor even said they were shaking as they typed.

Some devs say this is nothing new, that abuse has been an unfortunate by-product of the internet and core gaming for years. But how did we let it come to this?

Games are a wonderful medium that now, more than ever, offer something for everyone. Don't let @w0m4n_h8r undo everything we've accomplished.

James Batchelor
jbatchelor@nbmedia.com

Games developers must fight internet abuse together

Death threats and vile tweets have forced multiple female developers to leave home, and yet still the storm of harassment rages on. **James Batchelor** asks what the games industry can – no, needs – to do to stop this

by James Batchelor

THE GAMES INDUSTRY has failed to prevent the current deluge of abuse directed at developers and needs to find a way to stop it.

In the last two months, abuse against members of the industry has risen exponentially. Countless have condemned this behaviour and yet it still isn't dissipating.

The abuse currently polluting Twitter and other social media is largely aimed at female devs – targets include *Depression Quest* creator Zoe Quinn and Giant Spacekat founder Brianna Wu – and often linked, though not always, to #Gamergate.

The root of this self-professed 'movement' are well-documented enough, with details of Quinn's personal life leaked by an ex-boyfriend. But this incident has almost become irrelevant given the severity of threats levelled at victims.

And, as Wu tells *Develop*, the hashtag is not the virus but the symptom of an industry that "has been a boys' club for 30 years".

"Everything about the games industry sends the signal: 'this is a space for men'," she said. "When players are repeatedly shown that women are sex symbols and damsels in distress, is it any surprise that players go on to treat women poorly in real life?

"Gamergate feels like it owns the culture. Women and minorities are only welcomed if they keep their identity silent and don't try to change the status quo. If I am a feminist, I am an outsider trying to steal their games – even if I am an avid gamer and a developer."

The fear instilled by the abuse hurled at Wu and her peers is spreading. Multiple female devs refrained from contributing to this article for fear of attracting the same attention, and games designer Katie Goode says it taints everything she does to raise her professional profile.

"I worry about becoming known to people outside the industry," she said. "As I gain experience in speaking, writing articles, publicising my game, I am increasing the risk of abuse.

"I stopped playing online games years ago. I couldn't see why I was putting myself through

> ***"We either address this or lose a generation of women."***
> Brianna Wu

the torrent of abuse, and sexual messages. Today, instead of them directing their abuse at a gamer tag, they will be contacting me directly, by email, Twitter, Facebook, and maybe anyone else that associates with me."

ANTI-SOCIAL MEDIA

22Cans' head of production Jemma Harris adds that such behaviour has grown worse as the internet has seemingly bred "a faceless culture that thinks it's okay to do this".

"Over the last 20 years, as the internet has become part of daily life, people have in turn felt its their right to use it however they wish," she said.

"The behaviour, however, has had an effect defined as the 'online disinhibition effect'. Sometimes people forget there are human beings on both ends of a message, post or tweet. We need to re-educate people that what they are witnessing from themselves is actually anti-social."

Below, left to right: harassed dev Brianna Wu, 22Cans' Jemma Harris and Preloaded's Katie Goode call for an end to abuse

Even in the light of proposed legislation to extend prison sentences for cyberbullies to two years, *Fable* creator and 22Cans founder Peter Molyneux – no stranger to outspoken critics – says impulsive human behaviour is unlikely to be so easily dissuaded.

"It's very simple to be sitting on a bus and thinking 'that stupid fucking cunt, I can't believe he said that' – and those words playing on your mind just go through your thumbs," he said.

"You won't think about prison sentences, or even think you're offending people. You throw a post out there without really understanding the consequences. It only needs to be retweeted a few times – it could start as a conversation between your friends, and end up being front and centre of some huge case.

"This is the whole Pandora's Box of the internet that we've opened. I'm a great advocate for absolute freedom, but we as a society have to realise there is a price for that: instant accessibility means you can get good things and bad things – and that's a bitter pill to swallow."

Wu remains hopeful that the games industry can redeem itself, even now that harassment is "disproportional to the issues at hand" and "threaten the entire field, men and women".

She said: "The effect defeating Gamergate would have is incalculable, one of this field's most historic moments, remembered as the moment games development said: 'This is going to have to get better'."

// MEANWHILE ON DEVELOP.NET

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deve1op.net/1Far0Bl

Courting controversy: Releasing Underworld: Drug Lords on mobile
deve1op.net/1w1Va7g

develop iPad
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Death to Brianna @chatterwhiteman 7m
@spacekatgal You just made a game nobody liked. That's it. Nobody will leare when you die.
Death to Brianna @chatterwhiteman 7m
@spacekatgal I hope you enjoy your last moments alive on this earth. You did nothing worthwhile with your life.
Death to Brianna @chatterwhiteman 6m
@spacekatgal If you have any kids, they're going to die too. I don't give a They'll grow up to be feminists anyway.
Death to Brianna @chatterwhiteman 6m
@spacekatgal Your mutilated corpse will be on the front page of Jezebel tomorrow and there isn't jack you can do about it.
Death to Brianna @chatterwhiteman 5m
@spacekatgal How's that for terrifying you stuck up ? I'm sick of you feminist
Death to Brianna @chatterwhiteman 5m
@spacekatgal I'm going to rape your filthy until you bleed, then choke you to death with your husband's tiny Asian
Death to Brianna @chatterwhiteman 10m
@spacekatgal I've got a K-Bar and I'm coming to your house so I can shove it up your ugly feminist
Death to Brianna @chatterwhiteman 11m
@spacekatgal Guess what ? I now know where you live. You and Frank live at

Molyneux argues that it is not just the games industry, but the internet and social media that needs to take responsibility.

"This has been going on for years," he said. "The trouble today is it's more public. Twitter is orientated in a game-like way for people to get noticed. The way you do that, just like any bully, is to bully until someone responds and that's what is happening at the moment.

"The whole of social media is in transition. What will it be like in five or ten years' time? Twitter could become a very frightening place for anyone to be.

"Twitter doesn't want that, so what is it going to do to make this less open and less abusive?"

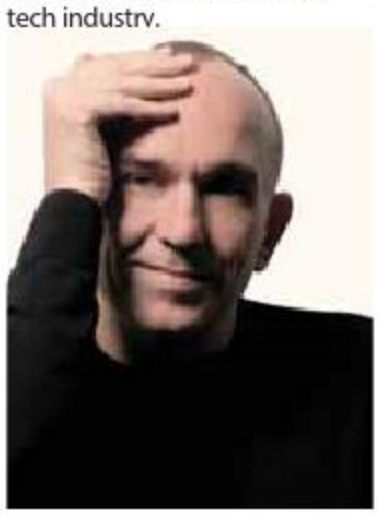
INDUSTRY ACTION

But far from waiting for Twitter to clamp down on this abuse, many agree it's high time the games industry took a stand.

Wu says: "I want to be very clear about this: You might see Zoe Quinn, Anita Sarkeesian and me as the main people talking about this, but every woman I know in the field is scared and terrified," she says.

"They're scared they will be next. They're scared their colleagues will shun them if they speak up. They're scared to enter the field in the first place.

"The choice is clear. We either address this as an industry, or we lose a generation of women in development. This harassment is worse in games development compared to other fields like journalism or even the wider tech industry.



> ***"We've opened the Pandora's Box of the internet."***
> Peter Molyneux

"A recent Massachusetts study showed that women make up about 20 percent of programmers in tech overall – but we're only three percent of programmers in games. Same resume, same skills, same people – why do so few women choose to work here? We need a long hard look in the mirror."

Develop has carried out our own research on this. Head to pg.6 to see the results.

Goode adds: "The recent events have made me aware, if someone disagrees with me I'm potentially risking my life for my job and hobby.

"The industry can stand up to this. Joint statement of intent from publishers and developers, great and small, will show that it's not 'just about the press'. The abusers can stop reading sites and playing the odd game, but we all say enough is enough – then they either listen, or face not playing anything."

Sadly, publishers have been slow to respond to the situation. Not a single publisher offered comment to our sister publication *MCV* on this subject, while those who we contacted deflected our queries to trade bodies such as the ESA, UKIE and TIGA.

Many of these bodies have issued statements condemning the abuse, while hundreds of Swedish game devs – including EA DICE, Massive and King – signed the #gamediversity petition, calling for equality and stating the industry "will never accept threats, hate, violence or sexism in the name of games".

Harris encourages more public industry-led campaigns to re-educate consumers on acceptable behaviour: "Take football: that industry ran 'kick it out' campaigns and it increases visibility that racism is not accepted. Over time, this has dramatically improved the sport and behaviour of supporters, and now anyone stepping out of line has a consequence to their actions. Maybe this is where the games industry needs to be.

"But individual developers cannot do this alone, the big players need to lead and all of us need to come together. It feels like we are waiting for something bad to happen before we react. It's not impossible, but it sure is a big task. So I ask the question to all games developers, where should we start?"

Wu concludes that this entire affair has distracted her from her career and her main priority, one shared by many a developer: making games.

"I worry every day what the long-term consequences will be," she said. "My only hope is that my colleagues will understand the risk I've taken putting it all on the line and stand with me.

"The gaming industry must adopt a level of professionalism and diversity commensurate with other industries.

"It's time to look in the mirror and have an honest question about the consequences of keeping this field a frat house.

"That's the long-term solution. The short-term solution is for everyone in the industry, from journalistic enterprises to publishers and developers to unequivocally denounce this movement.

"When Gabe Newell received a death threat from a Steam developer, there was instant coverage and consequences. Why are the women here not treated with the same respect?" ■

DEALING WITH ABUSE

WITH INTERNET BULLYING unlikely to disappear any time soon, attention must be given to how it should be handled.

Having dealt with threats and abuse throughout his career, *Fable* creator and 22Cans founder Peter Molyneux offered the following advice:

"When you're creating something, it's all about confidence and it's very easy to get your confidence knocked by a string of abuse. Especially when you feel powerless to do anything about it. It's like going back to the playground. I was bullied at school and this elicits the same sort of emotions in you: the feeling of being defenceless and voiceless.

"What you have to be careful of is if you ignore it, just like any bully they'll up the stakes. If you keep posting but totally ignore the essence of it, you can turn whole communities against you.

"What I try to do is unpick the salient points. Very often, people can get offended about things and start ranting, and just like anything they forget what they're ranting about in the first place. Returning to that original point logically can help dampen emotions.

"Sometimes it's best to just close down the hatches for a while and let it die down. With any fire, whatever material you throw into it, it's going to fuel it. It's very tricky thing, for our industry and just about any other.

"I wouldn't for a second suggest that these comments should be censored, because that's censoring the internet effectively. You've got to deal with them, and your community and the people you follow are often the best defence against that."

Meanwhile, Codemasters' Rich Eddy says the firm actually has a social media policy for its employees to help them avoid provoking such anger from consumers.

"Codemasters aims to create a working environment that is free from sexual, racial or any other form of discrimination, harassment or bullying for everyone across its teams," he said.

"On the online side, we have an experienced community team that work tirelessly to manage our passionate communities on our own and external forums and though our social media channels. In addition, they advise on the social media policy that runs throughout the company.

"Most importantly, they offer face-to-face social media training for anyone who wants to add their voice as part of our social channels, advising on best practice, tone of communications and explaining potential reactions to social media posts and how to deal with them and the people behind the accounts.

"Ultimately we have a zero-tolerance policy on all abuse, no matter where it comes from nor what form it takes and perpetrators are dealt with robustly."

The 15%

Women are underrepresented in the games industry, but what is turning more away from joining? **Craig Chapple** investigates

by Craig Chapple

AN INVESTIGATION BY *Develop* has found that the women represent just 15 per cent of employees at UK games development studios.

The survey received 85 respondents, studios that employ 2,806 staff in total. Of these, it was found that 433 were women. According to recent research by TIGA, the number of jobs directly supported by development studios stands at 18,093.

Our findings are similar to research conducted by Creative Skillset in 2012, which claimed that 14 per cent of the industry was made up of women. In 2009 women only represented six per cent of the sector, a drop from 11 per cent in 2006.

It would appear that the industry is now steadily improving diversity in games, a topic brought up at Develop Live last month (*see pg.30*), though numbers are still not reflective of a medium that has closer to a 50/50 split between men and women playing games every day, and progress is slow.

A BOYS' CLUB?

So why aren't there more women entering the games industry and taking up development roles? And is it a problem that stems from the sector or elsewhere in society?

"The history of the games industry is boys making games for boys," says David Smith, founder of Women in Games Jobs. "The success of games as a medium now means they are played almost equally by the young and old of both genders, but games creators have remained largely male.

"A natural reluctance to change what seems to have worked in the past has meant in certain areas the creation of a 'boys' club', where women are thought not to be welcome. This has made it difficult for the number of games developers who do want to align their workforces more closely to their customers to attract diverse talent."

There are of course many notable women in the games industry, such as Media Molecule studio head Siobhan Reddy, ex-Ubisoft Toronto head Jade Raymond and numerous popular indies, to name just a small number.

King's chief people officer Ciara Smyth says the issue lies with the industry's reliance on technical talent, where unfortunately there are fewer women making careers for themselves in.

"The net result is that there are proportionally less women in the sector than in others, which is a shame as the games market is such a vibrant and growing industry, where companies like King can provide exceptionally rewarding and challenging careers for anyone with skills that fit the industry," she says.

"In contrast to technical roles in gaming, when you look at the marketing of games and other functional areas within the industry, women are better represented. Until we can get more women thinking about and committing to careers in engineering, whether that be through opportunities presented through schools and colleges, or through companies like ours hosting mentoring sessions and open days to show the possibilities the industry holds for women, we will likely continue to see this under representation in the sector."

SEXISM

Sexism in the games industry is also a hot topic, and the air of that 'boys' club' Smith describes could be one factor turning women away from the industry.

> ***"It's important for devs to make it clear that some recent behaviour is not acceptable."***
>
> Eben Upton, Pi

Preloaded's Katie Goode says during her career there have been a few cases where she has been treated differently compared to others, and she isn't an isolated case.

"There were times where I could hear the loud misogynistic chat on the set of desks behind me, it used to get me so angry," she said. "The leader of that pack went on not to respect anything I had to say, and made it rather public in one email to the studio. I discussed it a few times with the lead designer, and I had many friends in the studio that supported me. He left soon after that incident."

Smith said a high proportion of women have felt discrimination on the grounds of gender at some stage of their career in games, and surveys conducted by Women in Games Jobs have presented hundreds of documented examples.

"It is widespread," he said. "The fact that many examples are unintentional or result from ignorance does not detract from its seriousness. It is also damaging for individuals who had the good fortune not to experience sexism to presume that this must consequently be the case for other women. Those not wanting to accept the industry suffers from sexism seize on such individual examples and avoid action."

Raspberry Pi CEO Eben Upton, whose non-profit

foundation aims to get more children into games, said the industry suffers from a perception issue, and believes the Gamergate campaign makes the industry a less attractive career option for women.

"We need to find ways to convey to people that although it can attract some of these marginal idiots around the edges, life inside the games industry is very much like anywhere else," said Upton.

"You'll have good days and bad days, good bosses and bad bosses, good colleagues and bad colleagues, but ultimately you'll be getting paid to do something which at its best can be incredibly rewarding.

"It's important for games developers and the press to speak out to make it clear that some of the behaviour we've seen recently is completely unacceptable: silence looks an awful lot like acceptance."

The industry suffers from some clear perception issues, but another problem facing the technology sectors in general is on a cultural level, and encouraging women to get into coding and get into the technical side from an early age.

A CULTURAL PROBLEM

Upton said it's important to keep girls engaged with maths through to at least the A-level stage, but said there appears to be a certain age during education where many girls are turned away from the subject.

"Anecdotally, there seems to be a decision point at around the age of 11 where significant numbers of girls decide that maths isn't for them, despite the fact that on average girls are outperforming boys at this age," he said.

"We then see a far smaller percentage of girls with good GCSE grades choosing to continue to A-level.

"There are obviously cultural factors underpinning this in the UK: you see some other countries that have much better participation rates. I think we can get there too in the medium-term, but the waste of potential is staggering. It makes you want to find every parent or teacher who's ever steered a girl away from maths and whack them with a stick."

He added an important step in getting more women into tech stems from the introduction of computer science to the National Curriculum, but suggested other methods need to be implemented.

> ***"Systematic change is needed to get young girls thinking about tech."***
>
> Ciara Smyth, King

"We often talk about the danger of making patronising concessions to girls in designing teaching activities – 'making it pink', for example – but we do need to find ways to make programming more relevant to children, as they're only going to stick with it they find it interesting," he said.

"This isn't just about attracting girls to programming: more generally it's about breaking out from the five per cent of children, girls and boys, who find statements and variables interesting for their own sake.

King's Smyth said raising awareness of the sector is one way to attract more women into games, and offered some examples of how King goes about recruiting staff.

"At King we have some very accomplished female leaders who I hope can be role models to those in other sectors and/or in gaming but perhaps considering King as a great place to work," she said.

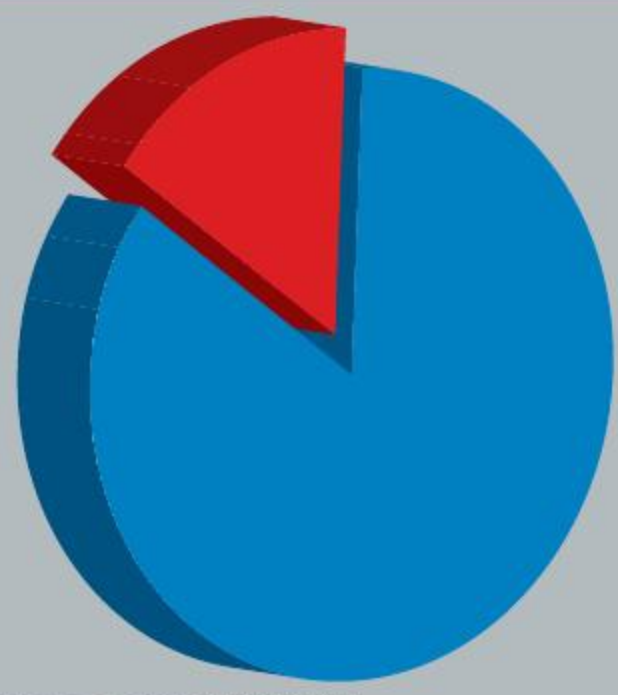
"Tapping into the network of our existing females is also a great way to encourage women to consider King. I do think systematic change is needed to get young girls thinking more about future careers in tech.

"At King we are partnering with organisations that focus on helping kids learn to code and to think about their career opportunities. Until we see changes to the system at that level it will be hard to see greater gender parity in the industry."

She added: "Unfortunately if there is not adequate representation of women in job families like engineering, it will continue to be a barrier to attraction and entry of more women into the sector. It is a self fulfilling prophecy that if not addressed in a strategic manner, it will not be changed." ■

King's CPO Ciara Smyth believes the lack of women in tech could result in a self fulfilling prophecy of turning off other women from taking careers in games. Below: Raspberry Pi CEO Eben Upton (left) and Women in Games Jobs founder David Smith (right)

GENDER BREAKDOWN OF 85 UK STUDIOS



NUMBER OF MEN: 2,373 (84.6%)
NUMBER OF WOMEN: 433 (15.4%)

85 STUDIOS RESPONDED to our call for figures on the make-up of the UK games industry, revealing of 2,806 employees, just 433 were women.

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DEVELOP DIARY

Your complete games development events calendar for the months ahead

DIARY DATES

Launch Conference
November 20th to 21st
Birmingham, UK
www.launchconference.co.uk

NOVEMBER

BLIZZCON
November 7th to 8th
Anaheim, USA
www.blizzcon.com

MIGS
November 10th to 11th
Montreal, Canada
www.migs14.com

NASSCOM GAME DEVELOPER CONFERENCE
November 12th to 15th
Pune, India
ngdc.nasscom.in

APPS WORLD EUROPE
November 12th to 13th
London, UK
www.apps-world.net/europe

THE ME AWARDS 2014
November 13th
London, UK
KBensley@nbmedia.com

LONDON GAMES CONFERENCE
November 19th
London, UK
www.londongamesconference.com

MOBILE GAMING EUROPE
November 20th to 21st
London, UK
www.videogamesintelligence.com/mobile

DECEMBER

GAMES INDUSTRY CHRISTMAS QUIZ
December 2nd
London, UK
ABoucher@nbmedia.com

EVENT SPOTLIGHT

LONDON GAMES CONFERENCE

NOW ENTERING ITS sixth year, the London Games Conference has become Europe's leading games conference, facing up to the challenges of the interactive industry.

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DEC 2014/JAN 2015

- 30 Under 30: The hottest young stars of development
- Multi-site development: Making games with teams around the world

DEVELOP #157:
FEBRUARY 2015

- Develop's Annual Salary Survey: How much are you worth?
- Recruitment Special: Our guide to defining your development career

For editorial enquiries, please contact JBatchelor@nbmedia.com
For advertising opportunities, contact ABoucher@nbmedia.com

AT A GLANCE

NOVEMBER 1ST TO 30TH
Movember
Our own Alex Boucher is giving up shaving for charity. Who else?

NOVEMBER 7TH
November Man
A spy film with Pierce Brosnan? Nope, haven't seen one of those before.

NOVEMBER 14TH
Assassin's Creed: Unity
As well as endless sequels, you can now create endless characters.

NOVEMBER 16TH
International day of tolerance
But some things are still completely and utterly unforgiveable.

NOVEMBER 18TH
Grand Theft Auto V
You played it to death last year but admit it, you want the shiny new one.

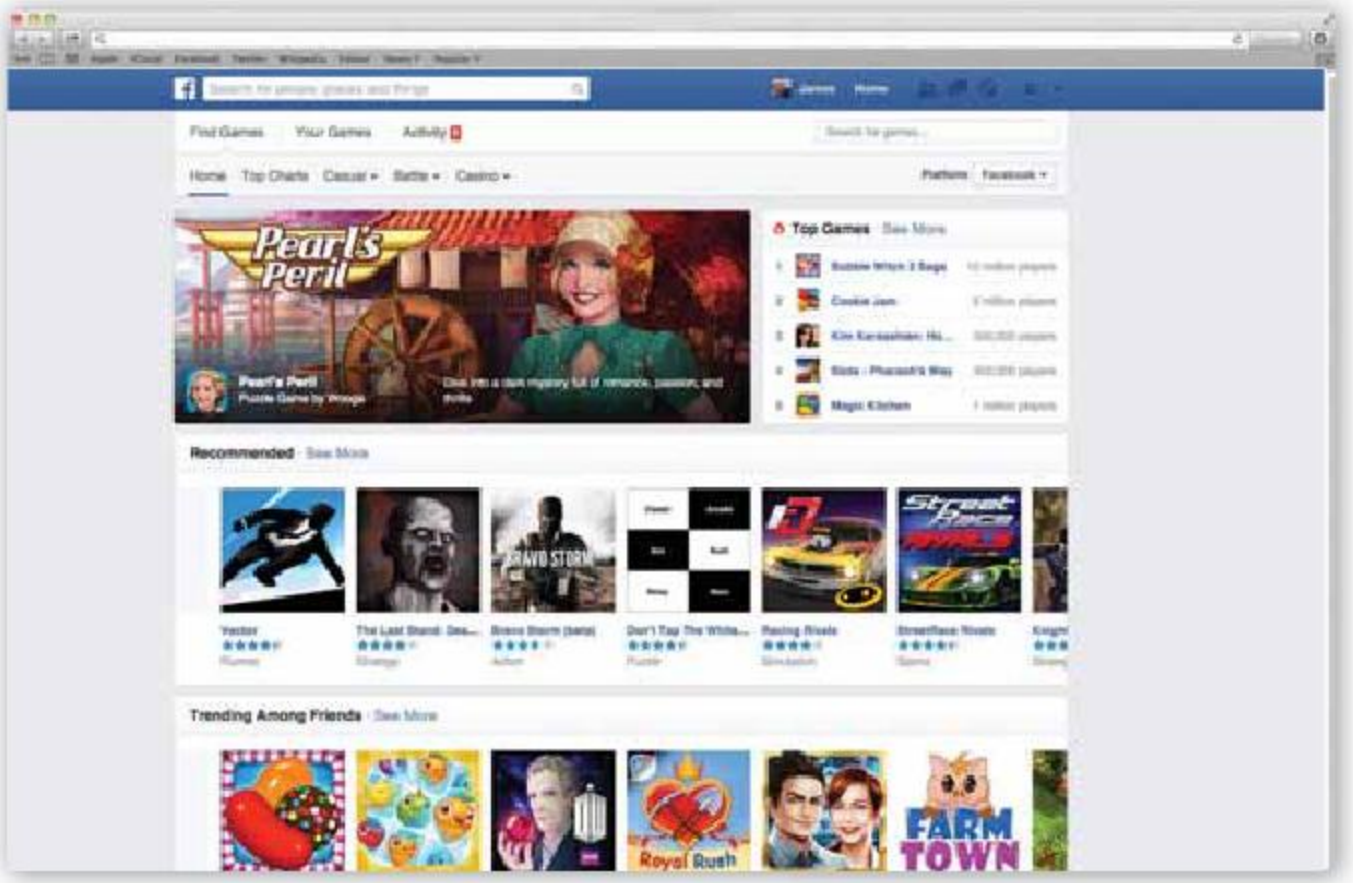
NOVEMBER 20TH TO 21ST
Launch conference
Two-day conference for indie devs, graduates and industry figureheads.

Variable declarations

//COMMENT: BUSINESS

Facing the music

Nick Gibson ponders the perils of Facebook as a games platform



Nick Gibson says Facebook's constant changes to which apps are allowed on its platform can cause serious problems for firms looking to innovate

WHEN SOUTH KOREA started worrying about gambling games on Facebook, their startling solution recently was to summarily switch off all Facebook games – a decision that has undoubtedly cost developers millions of dollars.

Once again, Facebook proved it is one of the biggest targets for government regulators, but this is just one of the pitfalls facing games companies considering developing on its still huge platform. What other tank traps await studios developing for Facebook? How open is it and is it still viable?

A platform implies stability; a safe, consistent place to launch and maintain games. But Facebook is still the most notoriously unstable of platforms, in terms of what you can do with its platform. Its policies have always been subject to sudden and enforced changes that aren't too difficult for competent teams to navigate technically, but whose impact on commercial models can be severe.

Platform holders naturally seek to continually evolve their platforms, which theoretically should benefit users and companies alike, but on Facebook there are evolutionary winners and losers. After each major policy shift, companies have died or left. Apps that relied on being able to send free recruitment posts into everyone's feeds suddenly found their main marketing channel had been drastically reduced. When Facebook introduced its single currency, it ejected the payment and offers companies that had underpinned a new and lucrative microtransactions market.

Facebook is a very Darwinian platform in general. Players can churn swiftly and in huge numbers. But the way the platform changes amplifies this considerably.

> ***"Facebook is still notoriously unstable in terms of what you can do with its platform."***

Some developers describe a Facebook "tax", referring not to the revenue share, but a cost contingency (budgeted as high as 25 per cent for some) to handle changes to Facebook's technology and platform policies. Fail to put that aside and you could be dead in the water.

FACE OF CHANGE

What was the most open of platforms has slowly but steadily been closed down. Recent changes mandate approvals for every new product that does more than just log you in, scrape email and search friend lists. If you want to get a user's location, access a user's status, publish on behalf of the user, know a user's birthday and other API actions, you need to be vetted. A small and presumably busy team now makes life/death decisions on new games, with a 'three strikes and you're out' rule reminiscent of Californian criminal law. After the third rejection, you cannot submit again until a time-out of unspecified length. This makes Apple, whose sometimes arbitrary approval process makes developers complain but at least allows appeals, look positively modern.

If a platform's approvals system doesn't work smoothly, consistently but flexibly, developers will go elsewhere. It remains to be seen how well Facebook's functions but they are certainly not easy to run. On many other games platforms, particularly consoles, it is surprisingly hard to get a game released. Even Gabe Newell admits that Steam's Greenlight is broken and not fit for purpose for many indie PC developers.

Facebook is also notable for the strategic use of its open platform to allow and then restrict new markets. Coins is just one example of how Facebook has repeatedly invited third parties to innovate new apps before later banning their activity. Its latest API will block a range of successful companies' products from the formerly permissible activity of reading users' streams.

Unless some kind of grandfather deal is done, already live apps like Flipboard and Hootsuite that collect or make recommendations based on users' feeds will be blocked from April 2016, and new apps are blocked altogether. This is a serious strategic risk for companies trying to innovate on the Facebook platform – you could find yourself banned or curtailed if you've unwittingly been competing with Facebook's future products.

So is this unpredictable and constantly changing platform still commercially viable for games? Granted, Facebook has seen a steady exodus of games companies either leaving or turning to the less choppy and faster growing mobile market. As a result, Facebook's games revenues plateaued and then started to fall.

Facebook is still home to some of the most profitable games companies, and it can still make you money, but you better be ready to move fast when unpredictable changes inevitably happen.

Nick Gibson is a director at Games Investor Consulting, which provides commercial check-ups, strategy and data to games, media and finance companies.
www.gamesinvestor.com

//COMMENT: DEVELOPMENT

Managing multi-platform releases

Debbie Bestwick presents the Worms team's top six tips for going cross-platform

IT'S ALWAYS BEST to ensure you're prepared for your game to go cross-platform and maximise your earning potential. Here's a few tips that every indie developer needs to know.

1. Do your homework

Prepare for much document reading and forum searching. During the process of speaking with platform holders, you may be given an account manager. They will be invaluable in guiding you through the process of developing your game for their platform, so listen to them. They'll tell you any additional hurdles to cross, like getting your game approved, submitting the game for review and getting pictures and text for online stores and social media.

2. Know your lead times

As a publisher, we quite often see people underestimate the time needed to get their game on console. Every game is different, but don't be lured into thinking this is a quick process – it can take months. We provide a customised 'requirements' document to all our partners which helps them make accurate assessments on timeframes.

Getting your game onto consoles usually involves changes or additions to your code. If your game has online multiplayer, you'll almost certainly have a lot of work to do.

3. Go the extra mile

Localisation doesn't sound like the friendliest of terms, but it can make a difference when reaching out to other countries. Do some research and find out where games similar to yours are doing well in the world, then see how much it would cost to support that country's language.

And don't hard-code all of your in-game text. Translation is much easier this way, opening up new avenues to sell your game.

4. Usability

As a developer, it's very easy to get tunnel vision and adapt to flaws in your game. An in-depth usability test is a great way to flag any potential issues for players experiencing the game for the first time. If consoles are not the lead platform, this is a great time to see how well the controls translate.

5. Age ratings

Do some research into your target audience. You'll need to make sure you're releasing at the right ratings in the right regions. Age ratings can be a costly process and you won't be able to enter final certification without these ratings in place. Most ratings usually take one or two weeks to return; however, some can take up to a month.

6. Submission time

Platform holders have high standards to maintain. From functional tests to compliance, your game will be put through rigorous checks to ensure it's suitable for release. You will have been developing your game with all these checks in mind if you did your research at the beginning.

Submission itself can take several days, but you get a pass or fail report at the end. If you didn't pass first time around, you'll need to fix up whatever came back and submit again. Generally, Team17 schedules two fails before passing, including time to fix up any issue.

This could add months to your expected release date. It's crucial for indies to factor this into their time and budget; you might need to support yourself for a long time before your game finally gets released.

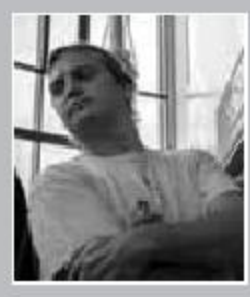
Debbie Bestwick is CEO and one of the founding members of Team17. She pioneered the company's leap into digital publishing. **www.team17.com**

Debbie Bestwick says developers need to carefully consider what is required of them when releasing on different platforms, and must consider usability, lead times, age ratings and the final submission process

//EXTRA CONTENT ONLINE

"It's not enough to know the right things to deliver. We also have to communicate that effectively to the rest of the team."

What makes a good designer?
Oscar Clark, Unity
deve1op.net/1DE9X9g



"I rehearse with three goals in mind: make sure the story is easy to follow, confirm I have the right duration, and to further improve the talk."

The art of pitching
Matt Southern, Evolution Studios
deve1op.net/1yUrpq9

"Working outside of your target market you are at risk of projecting your own foreign understanding of a country into a game."

Emerging market success
Oliver Jones, Moonfrog Labs
deve1op.net/1C0vp5E

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START YOUR OWN STUDIO:
Six pages of expert tips on how to form a new development firm
P17

DEVELOP LIVE:
All the biggest revelations and insights from our first ever conference
P27

DECADES OF DISTINCTION:
UK studio Distinctive Developments celebrates 20 years
P32

In good company

The story behind Never Alone is like no other in the industry. It's a title born from the effort of the Native Alaska people and, as **Will Freeman** hears, it's also part of a bold new development model

FEW GAMES HAVE a story behind them like *Never Alone*.

The puzzle platformer's creation is a tale of the indigenous people of Alaska turning their hand to games development, a gathering of Activision vets and peers braving a subarctic winter for a meeting, a studio consultant aged 84 – or maybe 86 – and the birth of the 'inclusive games development' concept.

And that such a tale should underpin *Never Alone* is especially fitting, for this is a game that hopes to continue the storytelling tradition of the Alaska Native people, and particularly the communities in the Cook Inlet area in the state's south-central region.

BEYOND REAL ESTATE

How *Never Alone* came to be starts with the Cook Inlet Tribal Council – a non-profit organisation that strives to support the Alaska Native people in the region, focusing on employment, education, family support, addiction recovery and community development; hardly a familiar start to the tale of a game's conception.

The CITC, spearheaded by CEO of 17 years Gloria O'Neill, decided the organisation needed to look to new places to continue its work. And it needed to generate enough money to enjoy some autonomy from its federal and state funders. It would continue to maintain close partnerships with both, but simply put, the CITC's for-profit Enterprise department was looking for a project that would make an impact relative to their body's goals, and make money.

> ***"We wondered what we have to share with the world. And what we have is amazing stories and culture."***
>
> Gloria O'Neill, CITC

"We looked at a number of potential investments," reveals O'Neill. "We looked at everything from funeral homes to real estate. Nothing really suited us in terms of taking us where we wanted to go making that money for CITC's mission, and making that impact."

That inspired O'Neill and her team to start considering the opportunities a little closer to home.

Never Alone is not only unique for its game experience, but also for the company behind it: Upper One Games, the only indigenous-owned games firm in the US

Over 35 elders, leaders and others from the Alaska Native community are involved in the creation of Never Alone to ensure it accurately reflects their culture

"We started to look to ourselves and wondering what it was we have that we could share with the world," she explains. "And what we have is amazing stories and amazing culture. At the same time we were looking at what was going on in the world and what are growing industries. And we were also really thinking about how to be progressive, and about how we could use technology and media."

Something technology-driven, progressive, perfect for sharing stories and not unable to make cash? It was at this point that video games leapt into a lightbulb in the CITC's collective conscience.

CULTURAL VALUES

But the CITC needed to move carefully. In Alaska Native people's communities, storytelling can be of invaluable cultural worth, and as such they can't be trivialised or carelessly capitalised upon. Of course, that would never be the CITC's intention, but picking the right partner was everything.

Games, in this context, offered the perfect opportunity to pass on these stories to a new local generation, and share them with the rest of the world. But if they were to be harnessed as the vehicle for the cultural artifacts of the Alaska Native people, they'd need to be handled with the upmost care.

It was at this point O'Neill and her colleagues found E-Line Media, a Seattle-based entertainment and educational publisher formed by some of Activision's earliest staff members. One of those was E-Line co-founder and president Alan Gershenfeld, who, having joined Activision in 1992, went on to chair the vast Games for Change organisation before his work at the outfit.

"We were looking for a partner who shared our values," says O'Neill.

> ***"Never Alone was high risk. We almost advised against it but we felt there could be a major opportunity."***
>
> Alan Gershenfeld, E-Line Media

"We found that with E-Line, so we said to Alan and his partner Mike Angst, if they could come to our state in the coldest part of the winter, in January, I'd have a conversation with them. They came, and we started the conversation about two-and-a-half years ago. We took around four or five months, where we learned about the video games industry, and started to look for the right place and way to make an investment."

MOVING ON UPPER

After much work considering the best options, with support from E-Line the CITC established Upper One Games; the first ever indigenous-owned games company in the United States. The mission remained the same: make money, make an impact, and share the culture of the Alaska Native people of the Cook Inlet area.

But now there was something else to be made; the game itself. And so *Never Alone* was conceived, with its Iñupiaq-language subtitle *Kisima Ingitchuna*.

The game was also brought into being with something else new; the concept of 'inclusive development', itself a process whereby the Alaska Native people would have input, involvement – even the final say – in every part of the game's creation, from design and narrative to marketing and distribution.

The reason was simple. If this was a game to share Alaska Native culture with not just the next indigenous generation, but the whole world, and to make money for the local community, it had to get it right.

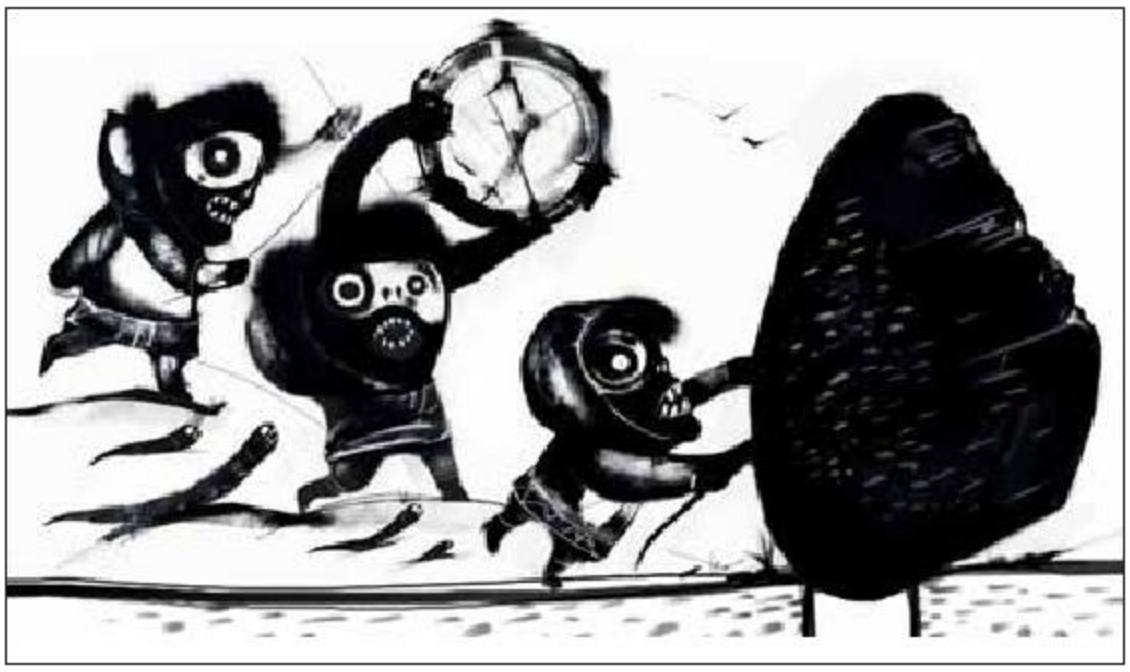
Over 35 elders, leaders and others from the community worked alongside a team of development specialists from several different nations, considering the best way to tell a story, integrate it with game mechanics and interactions, and correctly capture every detail of local life, from the detailing of the hem of a coat to the themes running through the platformer.

But it nearly didn't happen.

When Angst and Gershenfeld first met with O'Neill, they nearly advised that the CITC rethink their ideas.

"It was high risk, and it was complex. We almost advised against it, and told the team how we felt," reveals Gershenfeld. "But we also felt there could be a major opportunity."

O'Neill adds: "We learned there had never been a significant opportunity by an indigenous group in the video games industry. We felt we had something to



share, and that there would be an appetite for our stories."

Gershenfeld continues: "So we began a really in-depth analysis. We looked at how indigenous cultures were represented in movies, comics, graphic novels and music, and we found lots of great examples of commercially successful, very high quality, powerful and inclusively developed movies like *Whale Rider*, and various world music, and we thought 'why not a video game?'."

THE BLIZZARD'S ACTIVE VISION

That video game was *Never Alone*, which told the story of the endless blizzard.

The story was conceived by a great Alaska Native storyteller, whose daughter Minnie Gray joined the Upper One team to weave that treasured tale into a platform game that sees a young girl and mysterious fox accomplice set off head first into the storm to find its source and bring harmony back to the world.

"Minnie is possibly 84. Or perhaps she's 86. Nobody is really sure, to be honest," says O'Neill. "She's in her eighties, and she received the story of the endless blizzard from her father, who is a very famous storyteller.

"As we worked with Minnie and her family, we had to be sure to respectfully get the rights to their story, and involve Minnie in the process. So E-Line creative director Sean Vesce and Minnie spent a long time together talking about the idea and the story, and Minnie has picked up the controller and played the game herself. She understands that this story – *Kisima Inŋitchuŋa* – is now going to reach a global audience, and so she has this pride of her father's new voice."

That idea of a new voice is important to the game – which serves as a single player or co-op experience, and encourages intergenerational play sessions – as Gershenfeld explains.

"*Never Alone* is not just about being a faithful documentation of Minnie's father's story," he says. "*Never Alone* is in part about extending these stories into a new medium, for another generation, and to last another 100 years. Minnie hasn't looked to become a core gamer. She wanted to know what the affordances and limitations of the medium are, and how can it best be used to share her father's story. It was wonderful to have her involved."

> ***"Our people are evolving, and video games are an amazing medium to evolve our stories with us."***
>
> Gloria O'Neill, CITC

O'Neill interjects: "Our people are evolving, and our stories evolve. They continue to evolve, and that's why we love the power of video games. I think they are an amazing medium to evolve the stories with us, as we tell those stories to new generations at home, and to the world."

Never Alone, which mixes elements of *Limbo, Braid, Journey* and *Another World* is almost ready for the public. It is due for release on Steam, PlayStation 4 and Xbox One on November 4th, with possible Wii U and Vita versions to be confirmed for early 2015.

MORE STORIES TO TELL

In the meantime, Upper One Games and E-Line Media have now merged. One of the benefits, says Gershenfeld, is that E-Line's all-male team has now been blended with the all-female leadership of the CITC, from which O'Neill and her colleagues have emerged with a wealth of new job titles, standing both as tribal council leaders and video games developers.

How *Never Alone* fares, of course, is yet to be seen. But the early press response is positive, the Cook Inlet Alaska Native people have their own studio, and the industry has a new model for development to freely share.

Never Alone's story has not yet reached its closing chapter, but it's certainly shaping up to be a tale with a happy ending.

"A lot of people feel video games and digital media are disconnecting youth and young adults from their culture, their elders and their language." concludes O'Neill.

"But why not use it to reconnect? That's what we hope to do." ■

www.upperonegames.com

WHAT IS INCLUSIVE GAMES DEVELOPMENT?

WHEN THE COOK Inlet Tribal Council joined forces with E-Line Media and founded Upper One Games, they wanted to do more than develop *Never Alone* for the benefit of their local people and culture.

They wanted to build a practical template and case study for other developers to use, so more indigenous people and games makers could pair up and make high quality, profitable titles that benefited native communities. As such, *Never Alone* hopes to stand as a benchmark for what can be achieved.

"Inclusive games development is about involving the people whose culture the game represents," offers E-Line co-founder and president Alan Gershenfeld, who with colleagues and peers came up with the concept. "No decision on the game, from the choice to do it in the first place to the research, the design, the marketing and the distribution channels, has been done without being inclusive of the people the game represents.

"The team should be built from the ground up to include people who understand how games development is led, and the team from outside the culture should immerse themselves in it. Plus, from the other side people should immerse themselves in game culture, to understand what the medium is.".

And it's not as simple as offering a concrete method or rulebook on embracing other cultures, adds Gershenfeld.

"Nothing's set," he says. "It's about how you approach the process relative to each specific example, and about developers and a local culture going on a journey together. And it's a living culture you work with; something that is still continuing and evolving as you work with it. It's not just about looking back to the past."

Upper One Games have worked hard to ensure the artwork is in keeping with that already used by Alaska Natives in their stories

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72 tips on starting **your own studio**

There's never been an easier time to branch out on your own, but there are many things you need to consider before hand – at least 72 of them, in fact. **James Batchelor** asks industry experts, indies and more to share their wisdom

GETTING STARTED

1. "Before you start your company, ask yourself why are you doing this – and give a very honest answer. Do you want fame or fortune? To be celebrated as an artist or be a powerful force in the games business? All are cool. Just make sure you identify your true passion, because making games isn't easy and you will need that higher purpose to drive you forward."
Imre Jele, Bossa Studios

2. "Figure out the studio you want to be in five years time, and constantly ask yourself if what you are doing gets you closer to that goal."
Dan Pinchbeck, The Chinese Room

3. "Double every time estimate you make. You might be great at estimating how long something will take, but 1,001 things will get in the way."
Will Wright, Hidden Armada

4. "Remember you are not just building a creative team – you are also starting a commercial entity. Do not take this lightly; it will make or break you."
Simon Bennett, Roll7

5. "Treat it like a business. Document and create agreements with everyone you work with. Make it clear from the beginning the IP ownership rights and how individuals will get paid. Get it out of the way in the beginning so you're all on the same page. "
Frank Delise, Autodesk

6. "You will wear many hats: business, PR, HR. Don't be afraid to show what you're working on. Ideas are cheap, execution is key."
Marc Williamson, Tag Games

7. "For any small indie studio, be prepared to spend a LOT of time doing tasks other than actually making the games."
Charlie Czerkawski, Guerilla Tea

8. "Think about your audience. What platforms are they on? What devices are they using? Where might they be in the future? What devices will they buy? Make sure your content is ready to go wherever they are by using the right cross-platform tools from the outset. A flexible, future-proof foundation for your game means it'll stay relevant and engaging for longer."

Charlie Peachey, Marmalade Technologies

You might think an office will make your studio appear more professional, but in an era of remote working, it could be an unnecessary, and very costly, expense

FINDING FUNDS

9. "Always have a plan B when it comes to funding. It doesn't matter if it's savings, freelance work or selling body parts. If there's one thing not guaranteed in video games, it's the ability to make money."
Nicoll Hunt, I Fight Bears

10. "Research which pots of money you can access. Make sure you know about UK tax breaks to get 20 per cent back off your game production costs, as well as the R&D tax breaks. Understand how to value what IP you have – not just the game, but tech, people and skills too. Know what kinds of investors you should be targeting for the stage you are at."
Jo Twist, UKIE

11. "If you can fund a game yourself, it's worth it. The extra pressure or loss of IP isn't. You'll find that it saps a lot of your time with with negotiating, builds, formalities, lawyers – when you can just get on and make it"
Katie Goode, Preloaded

12. "Plan your finances accordingly. Avoid all expenses that are not absolutely essential. You can get a lot for free if you ask nicely and create some interest in what you're doing: for example, extended trial licenses for software, expo fees and so on.
Russ Clarke, Payload Studios

13. "Raise money for development, not marketing. It's easy to find marketing dollars if you have good beta metrics. It's hard to raise money for your third game idea when you've killed the first two. Find investors who understand this."
Simon Hade, Space Ape Games

14. "Don't register for VAT until you need to. Learn about games tax relief."
Fiona Stewart, Formerdroid

15. "Funding sources are often weary about giving cash to people – there is no guarantee you'll do what you say with the money. Instead, ask your sources to fund more tangible things that developers need, such as PCs and other equipment."
Joe Brammer, Deco Digital

16. "The lesson that has cost us (literally) most dearly is not allowing enough in the budget for the tech spend. It's like building your own house: whatever you had in the budget originally, quadruple it and you're probably about right. Ignore this advice at your peril!"
Jessica Curry, The Chinese Room

17. "Accept you will need to have good relationships with 'professionals' – accountants, lawyers, people in banks."
Paras Khona, Mediatonic

18. "If you're looking to start your own studio and don't have deep pockets of your own, you'll first need some funding in order to pay salaries, purchase hardware and software and to travel to events. Initially you'll need a prototype of a game to appease investors and a previous track record helps."
Dan Da Rocha, Mudvark

OPENING AN OFFICE

19. "Don't be too quick to rent space for your studio. It's a waste of money. Don't underestimate how expensive it is to run and maintain a studio and staff. Make sure you've worked with your team on several projects before forming a registered company."
Fiona Stewart, Formerdroid

20. "Only get a physical office when you really need one. A comfortable chair and a reliable internet connection are far more important."
Nicoll Hunt, I Fight Bears

21. "If you're in an area marked for regional development, speak to the local councils. There are often fantastic deals available. Try to find somewhere that has space, working air conditioning and that gives you space inside and outside the office to move around."
Robert Troughton, Epic Games UK

22. "Working remotely can be hard to manage so be sure to maintain strong processes for the team. Have a daily call and cover what each team member did yesterday, will do today and if they have any blockers. Don't point the finger, as this will never help you to improve."
JP Vaughan, Rocket Rainbow

DOWN TO BUSINESS

23. "Mastering the commercial side of development is critical, not just for building and maintaining a sustainable business but for attracting investors. So many developers ignore this, focus on the creative and technical side and go under within 18 months."
Nick Gibson, Games Investor Consulting

24. "Don't agree to deals too quickly. Thoroughly assess all options, take advice and decide what is most important to your business."
Alex McLean, Engine Room Games

25. "The business side is important. Get some advice from professionals all working in the industry. They are expensive by the hour, but you'll only need a little advice and it could save you a lot later. Most will be happy to chat free for an hour on the phone."
Philip Oliver, Radiant Worlds

26. "Don't forget the details: contracts, accounts, shareholder relations and other non-game-related stuff. Agree who is responsible for each one of these things, and make sure they have sufficient time and resources to do them."
Vincent Scheurer, Payload Studios

27 "Try and keep up-to-date accounts. They will help you to make some crucial business decisions like tightening the purse strings and potentially weathering a storm. A useful and free accounting tool is Manager.io – it can also be used to produce invoices to bill any clients."
JP Vaughan, Rocket Rainbow

28. "Most of your time will go on admin, chores, following up business leads and so on. This burden grows with your team. Don't expect to spend all your time developing, and don't be afraid to spread some of the boring work out to your collaborators. There are no prizes for shouldering the heaviest burden."
Russ Clarke, Payload Studios

LEGAL CONSIDERATIONS

29. "Use a lawyer for contracts. Employment and copyright laws are very complicated. Just because you commissioned and paid for a specific asset doesn't mean that you can use it wherever you want."
Danielle Swank, Barking Mouse studio

30. "Make a contract for a rainy day and always consider those rainy days before signing."
Barry Hoffman, Eutechnyx

31. "Get the ownership structure right with your co-founders – it can save a lot of boardroom arguments down the line. That means: agree shareholdings fairly upfront. Get it properly documented. Use a shareholder agreement to establish how to run the company. Build a good relationship with a games industry lawyer who can help advise the studio, make introductions and show when to spend money on legal stuff but also when not to. The games industry is slowly becoming more regulated: keep an eye on data privacy, consumer law, marketing law and free-to-play regulation developments."
Jas Purewal, Purewal & Partners

A studio's only as good as its team, so be sure to follow our experts' advice on recruiting the right people

GET CONNECTED

RECRUITING A TEAM

32. "Get your company incorporated. It's surprisingly easy, not too expensive, and pays dividends in the long run. It can protect you from personal liability, and allow you to involve founders, partners and investors in a variety of different ways. It can also have tax benefits, among a variety of other things. Pick a name for your studio or products, and check whether it is available. Think about filing some trademark protection and tying up some domains for it early to avoid other people stealing your thunder."
Mark Fardell, Jagex

33. "Unless you're exceptionally lucky, your studio will need the help of others to truly prosper. Opportunities, friendship and knowledge comes from committing time to building and maintaining those relationships."
Alex McLean, Engine Room Games

34. "Use social media. Get posting and follow people and organisations who are saying something interesting. Don't be too serious, but be professional as well. People like personality."
Jo Twist, UKIE

35. "Get involved in your community. Studios have their own challenges, but there's no need to figure them all out yourself. Many indie developers are more than happy to share their hard won experiences. If there are no local studios, reach out over social media and get to know people at conferences."
Jim Fleming, Barking Mouse Studio

36. "After a meeting, connect on social media to remain memorable."
Barry Hoffman, Eutechnyx

37. "Get to as many conferences as you can afford to – financially and time-wise. Don't ignore the 'little people' – sometimes they turn big and, if you weren't notable enough to remember, that could bite you in the future when you want their help. Help others as you would hope others help yourself (you can have that corny tag line for free)."
Robert Troughton, Epic Games UK

38. "Networking is not all boys' clubs and backslapping. The industry is really mutually supportive, and getting to know people within it can help you punch above your weight as you're starting out. In the throes of setting up or mid-development, spending time with people in the same boat can be the difference that keeps you sane."
Helen Burnill, Mediatonic

39. "If you are a boss, be a good one. Encourage people, don't beat them. You will get much more out of them."
Fiona Stewart, Formerdroid

40. "Time logged in trenches is the biggest indicator of success for a team. Focus less on the game design and more on getting a handful of front line doers (developers, artist, etcetera) who have worked together before to invest themselves in the project."
Simon Hade, Space Ape Games

41. "Be very careful when recruiting staff who are working at other studios. Misunderstandings and overreactions can be damaging. Remember: the people you are trying to hire have their own career plans, and may not tell you everything. Check for problematic contract clauses early on, and insist on getting stuff in writing so there are no surprises down the line."
Russ Clarke, Payload Studios

42. "Finding a team to work for free with the promise of equity and royalties can seem daunting, but it is very possible. When I was, the first thing some artists wanted to talk about was money. The guys I chose wanted to be here no matter what, but they knew that I wasn't able to accumulate funds to pay them out of nowhere, so from the start I made sure everyone was prepared to survive for six months off whatever we could."
Joe Brammer, Deco Digital

43. "Find a good partner. Starting a studio is like getting married and having a baby all at once. It's a bunch of sleepless nights and new expenses. So make sure you find someone who can share the load with you."
Danielle Swank, Barking Mouse Studio

44. "Find people to work with that are reliable and that you like. When you find working relationships like these, work extra hard to maintain them – when people have fun making an experience it shows in the game."
Oliver Clarke, Modern Dream

45. "Advisers, investors and top developers tell me time and again that the management team is the top priority. Build the strongest management and leadership team you possibly can."
Richard Wilson, TIGA

46. "Take ownership of studio recruitment from day one. Don't be led by external agents or influences who might try to exploit your business naivety. Set your own culture and quality standard and stick to it relentlessly without compromise. Your early hires will be key to your future success."
Peter Lovell, Jagex

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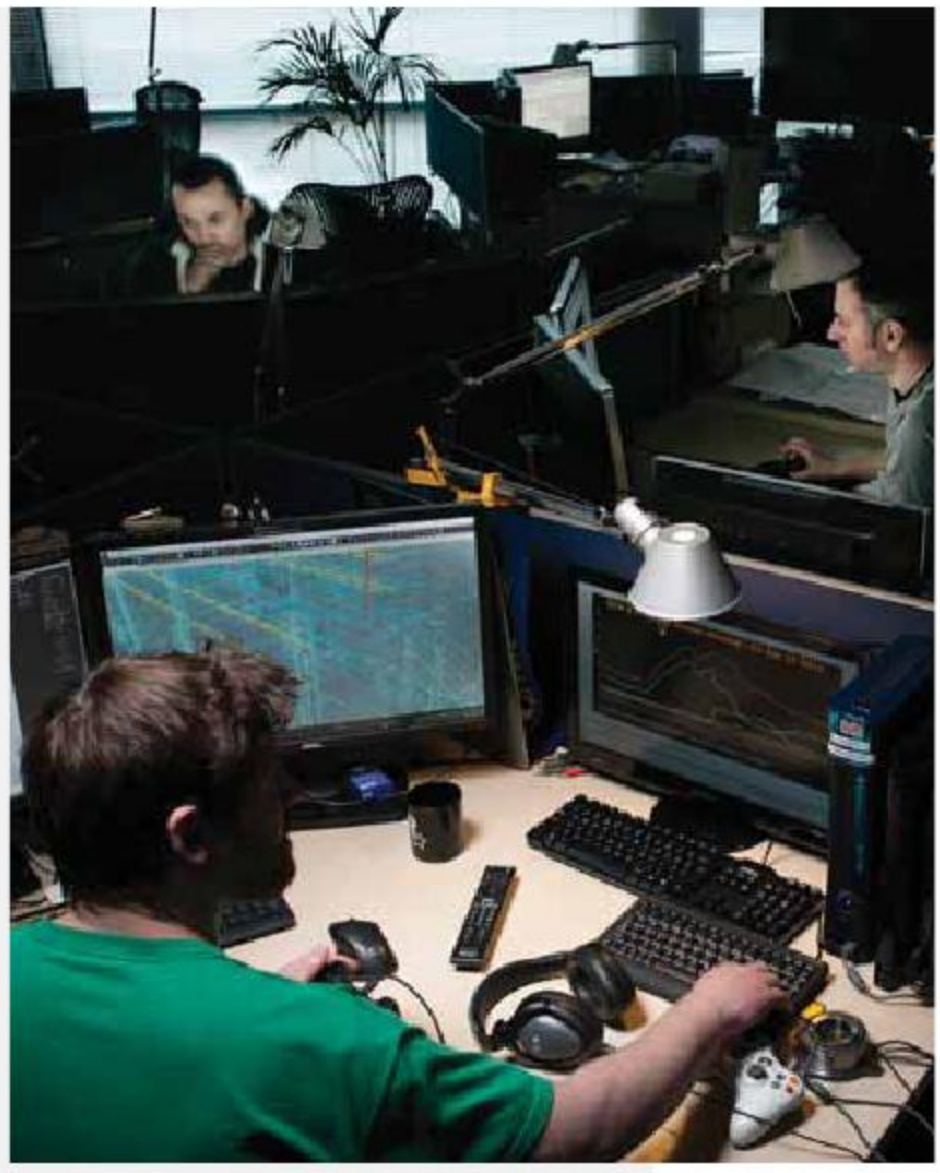

47. "While your team is small, you may feel you are missing certain specialty professions, but don't hire these skills in permanently before you know you need them full time. Instead contract experts or even trade resources with other start-ups."
Mike Burnham, Marmalade Game Studio

SPREADING THE WORD

48. "Promote early and often. Tell the world about your studio and game as soon as you can, and share any updates with how it's going. If you wait until the game's ready, it'll be too late."
Will Wright, Hidden Armada

49. "PR has become a two-step rocket: use PR to reach partners, then partners can kick-start traffic."
Barry Hoffman, Eutechnyx

50. "Spend more time and attention on PR than games development."
Philip Oliver, Radiant Worlds

51. "Work out your studio USPs from the get-go, establish strong, active social channels, and plan what you want to achieve. Schedule time in for promotional work – or get outside help – but don't ignore it at your peril. Establish yourself as people with vision and experts in particular fields, then offer your opinion to the press on relevant trends. It's a great way to establish your reputation long before you've any game content to show."
Natalie Griffith, Press Space PR

52. "Journalists want to write about stories. A new game from a new developer is not a story. Talk about what makes you different."
Nicoll Hunt, I Fight Bears

53. "Include your staff in your PR with regular social media announcements, magazine articles and so on. This can be a great morale boost. Try to consider everybody within this, not just your management and leads."
Robert Troughton, Epic Games UK

54. "Don't underestimate the power of online marketing. Make sure you line up some good online reviewers for your projects – they can go a long way in getting your title noticed, especially during a Kickstarter launch."
Frank Delise, Autodesk

55. "If you want to know why average looking games do well and something you love is a 'sleeper hit', it may be the dev being sensible enough to stash some cash away for advertising. Be ready to gamble £1,000 on absolutely nothing when there's the chance it'll bring in £2,000 in sales. Alternatively, spend money on booths at things like EGX, which get you some great face-time with gamers."
Dan Marshall, Size Five Games

CHOOSING THE RIGHT TOOLS

56. "Don't re-invent the wheel. More often than not, someone has already produced the tools and tech you need for far less than it will cost you to produce it. There are powerful game engines available for very reasonable money. The same applies to applications for artists, coders and designers. Only invest in what you need."
Oliver Clarke, Modern Dream

57. "There are loads of affordable back-end and middleware services available to support you with technology and save your precious time while starting out. Spend your time focusing on growth and making games, not chasing your tail with functionality."
Adam Fletcher, Mediatonic

Equipping your studio with the right tools, software and equipment will be essential to future success

GENERAL ADVICE

Working together as a team is vital for new developers. Everyone needs to be on board with the vision of both your business and your games

58. "Keep developing your pipeline. You'll never find the most optimal way to work straight from starting up. Look into any software suggestions made by employees – they normally know more about their discipline than you."
Simon Doyle, Team Junkfish

59. "Give your people the best tools, even if more expensive, as your people costs are the highest when making games."
Barry Hoffman, Eutechnyx

60. "It is important to innovate, to stand out. The mobile and tablet arena is an incredibly crowded marketplace, so whether it is a striking art and animation style like Futurlab's *Velocity 2x* or an ingenious approach to audio like Somethin' Else's *Papa Sangre*, ask yourself how you can make something genuinely different."
Richard Wilson, TIGA

61. "There's the 'Right Solution' and the 'Best Solution For Now'. Learn when to choose between the two, and when to revise that choice. Starting simple and iterating quickly is usually a good rule for most of what you'll do. Stay up to date with what your competition is doing, and if you don't have any, ask why."
Alex McLean, Engine Room Games

62. "Get a mentor. Having someone who's been through the process of setting up a business to talk to is invaluable. They'll be able to tell you how to fill in Needlessly Wordy Form No.114, or perhaps – more importantly – that if you don't fill it in, you'll lose 30 per cent of your revenues."
Simon Doyle, Team Junkfish

63. "Games built without knowing who the audience is and what they want are doomed to fail. Imagine a single person who'd love your game – but you need to understand that person fully. The other 999,999 players can come afterwards."
Imre Jele, Bossa Studios

64. "Work smarter, not harder. Find tools and services to make your job easier – you're going to spend so much time organising and communicating that when it actually comes to doing work, you need to be as efficient as possible."
Matt Zanetti, Guerilla Tea

65. "Focus on making unique features that make your games great – and use off-the-shelf solutions for everything you possibly can. Once you've created a feature or mechanic, iterate. The best learning technique is to do something once and straight away do it again, but better – make creativity part of your muscle memory."
Harvey Elliott, Marmalade Technologies

66. "Be unique. Never go head to head with another game that's already out and successful."
Philip Oliver, Radiant Worlds

67. "It's easy to work long hours and let your personal life fall by the wayside. Taking a break can help you refocus – burnout can be detrimental to your company's success. Humans were not made to sit at a computer for 12+ hours a day. This sounds like a no-brainer but when you get into the start-up zone, it's hard to think about anything else but the business."
Dan Da Rocha, Mudvark

68. "Joining a trade body is an excellent way to get support for you, your company, save money on services, events and tools, and have personal introductions made for you. You also get a say in policy decisions that affect you."
Jo Twist, UKIE

69. "If you hope to generate revenue, your business strategy needs to be more creative and sturdy than any of your game concepts. Do your research. Find an area where you can stand out, however niche it may be, and always focus on your core competence or IP, rather than chasing all of the other gold prospectors into obscurity!"
Nick Pendriis, Hoverfly Studio

70. "One great exercise as you're building your next game is writing the back of the box: What would it say? Why is it unique and fun? What sets it apart? Do a mock review: What would reviewers write about your game? It may help you with your pitch, either for Kickstarter or to a publisher."
Frank Delise, Autodesk

71. "If your first game's launch is only a few months away, start planning game No.2. It's easy to fall into the trap of over-focusing on finishing your game. It's likely that after your game is released you'll be supporting it, so get used to juggling both."
Mitu Khandaker-Kokoris, The Tiniest Shark

72. "The best way to stand out is to create something different, wacky, and game-changing. Outflank the triple-As with oddball weirdness – at least you'll get talked about: exposure is 90 per cent of the battle. And for goodness sake, if you're making a clone, just stop."
Kevin Beimers, Italic Pig

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18 lessons learned at **Develop Live**

Last month, the first ever Develop Live offered attendees insights into a diverse spectrum of games development disciplines. Unable to attend the Edinburgh conference? We have the best advice and revelations right here

1. LITERATURE AND GAMES SHOULD JOIN FORCES MORE OFTEN

DEVELOP LIVE KICKED off with a talk by best-selling British crime author Christopher Brookmyre, who discussed how games influenced much of his writing.

When asked by UK studio RedBedlam if he was interested in developing of a game, he shocked the team with his enthusiasm.

"There was a sense of surprise that a writer would want to have anything to do with this, because traditionally writers have their work optioned to be adapted and then they want nothing else to do with it," he said.

The 13,000-word design document Brookmyre wrote for forthcoming FPS *Bedlam* ended up becoming the basis for a book of the same name, and the author added: "It turns out having a published novel is a great way to do raise funding, rather than just having this big ideas document."

The author was surprised more of his peers haven't been involved in creating an FPS.

"It is the genre that's closest to a novel," he says. "A book's narrative structure is linear and many people want the FPS to be the same. They want to be taken through a guided story just as they are when reading a novel."

2. RELATABLE CHARACTERS ARE ALL ABOUT THE EYES

Cyberpsychologist Berni Good offered insight into the 'uncanny valley': where characters that look almost, but not exactly, human cause revulsion in players.

"Uncanniness increases with a lack of human likeness in facial expressions – particularly the upper face, with the brows, forehead and area around the eyes being most significant," she said. "It's really important to get the graphical fidelity right in this area."

> ***"It turns out having a published novel is a great way to raise funding, rather than a big ideas document."***
>
> Christopher Brookmyre, author

This is because a proven visual marker for psychopathy is a lack of facial or startled response in that eye area.

"When movement is removed around this area here, people get quite uncomfortable," said Good.

She pointed to the example of early *Heavy Rain* characters, which were taken back to the drawing board when players weren't associating with them. Meanwhile, *The Last of Us* was identified as a game that handled characters' facial responses very well.

3. FIVE WAYS TO MAKE A RESPONSIVE CROSS-PLATFORM GAME

For developers of browser games, Chunk's interaction designer Graham Dobie gave an overview of how studios can create titles that run on any desktop, laptop or smart device:

1. Be aware of the viewport size. This is not the same as screen size because some devices don't let you get rid of the browser interface, e.g. address bar. Research viewport ratios of every device you develop for.

2. Keep all of the interaction within a safe area in the middle of the viewport. That way, users will be able to access all playable items no matter what device they're one.

3. Remember you don't have control over the orientation of the browser, which can be used in either orientation. Use a graphic to prompt users to rotate their device if needed.

Hundreds of developers and students attended the inaugural Develop Live, with a variety of expert speakers taking the stage

Various Scottish indies offer advice on networking in one of three panel sessions held throughout the day

4. Be mindful of input options. It's tempting to use the microphone and gyroscope on tablet devices, but provide an alternative for players using a keyboard and a mouse.

5. Keep the weight, i.e. megabytes of data, of your assets as small as possible. Consider compressing them where possible.

4. KICKSTARTER WAS LESS THAN A QUARTER OF BROKEN SWORD FUNDING

Revolution COO Noirin Carmody broke down the sources of funding for *Broken Sword 5*.

She said the studio had "substantial reserves" from sales of digital versions of its back catalogue of games so 75 per cent of the game's costs ended up coming from the studio's own money.

Though the Kickstarter funds of $771,000 were significantly less than the studio's own investment, Carmody said the crowdfunding site offered a great platform for connecting with users – though it also increased the development cycle and number of features in the game due to the time it took to create the pitch and the subsequent stretch goals.

5. MO-CAP NEEDS MORE AND MORE DATA

Dimensional Imaging CEO Colin Urquhart told attendees that while traditional mo-cap methods, such as marker dots, are still widely used, they are not the most effective way to capture the best performances.

"There are a growing number of companies using head-mounted cameras with a marker-based system," he said. "There are also a systems where there are no markers, but they're tracking key features in the face.

"One of the disadvantages of all these systems is the data is quite sparse. To try and recover realistic facial expressions using a sparse set of data requires more work – you either need a more complex rig, or need to do a lot of manual tweaking to get better and better realism for facial performances."

> ***"Anything you can develop that is innovative is something healthcare may invest heavily in."***
>
> Cilien Kearns, medical illustrator

6. DEMAND FOR DIALOGUE IS RISING

Blockbuster games include more dialogue than ever before and this is expected to continue increasing in the years to come.

Gregor Hofer, CEO of Speech Graphics, observed that there are just 2,500 lines of dialogue in *Half-Life 2* and 80,000 in *GTA IV*, but 160,000 in *GTA V* and 200,000 in *Deus Ex: Human Revolution*.

"There is a clear trend towards more and more dialogue, and all of it needs to be animated," he said.

"You can even see this trend within franchises – BioWare's *Mass Effect 2* had about 20,000 lines of dialogue, while *Mass Effect 3* had 40,000."

7. HTML5 VS UNITY: USE WHAT IS BEST FOR YOU

Amazon developer evangelist Jesse Freeman discussed how HTML5 and Unity compare.

Freeman said HTML5 is perfect for quickly making casual games. Cons for using HTML5, however, include not always picking the right framework, and not knowing where to even begin, given the sheer number available. Freeman added that limited tool integration and inconsistent performance across the board were other potential cons for HTML5.

Unity is great for devs as it is designed for complex 2D and 3D game development. Highlights for him included the use of C# for coding, the built-in physics, preview, debugging and component building features and the general ease of development.

On the flipside, Unity can "get in your way" at times, he said. Freeman stated for someone like him who likes to build everything in his own way, Unity would sometimes cause problems because he wasn't developing "in the Unity way".

8. SURGEON SIMULATORS ARE REAL

Nothing to do with the hilarious Bossa game, mind. But medical illustrator Cilien Kearns revealed there are scores of apps designed to help train surgeons for various procedures.

Charity Smile Train commissioned a simulator to prepare surgeons for all complications when fixing children's cleft palates and lips, making it much safer when they come to operating on patients.

"Another example is one iPad app that uses augmented reality during liver transplants to show an overlay of 3D data from scans of that patient, allowing surgeons to know which vessels they need to find," said Kearns.

"It means the operation takes less time, and has less complications. Surgeons say this will replace equipment worth $500,000.

"In any society in any part of the world, healthcare is a fundamental cornerstone.

"Anything you can develop that has this kind of innovation and potential money-saving is something that healthcare industries across the world have a lot of reason to invest heavily in."

9. AUDIO NEEDS MORE ATTENTION

Sound designer and Abertay graduate Eden Morrison believes audio has become "a second-class citizen", citing conversations with professionals who have worked on projects where "sound was an afterthought".

Morrison argues audio is essentially half of all the sensory feedback players receive from games, with visuals being the other half – and yet more effort arguably goes into the latter.

"We can spot visual repetition very quickly, but with sound effects and music it takes a lot longer before repetition becomes noticeable," he said. "But do we want to get to the same place as film, where some sound effects have become so generic they've become industry in-jokes, like the Wilhelm scream?"

10. HOW TO KEEP VIRTUAL REALITY PLAYERS SAFE

Virtual reality draws players into such an absorbing environment, developers have a responsibility to keep them safe, according to Preloaded's Katie Goode.

"This means physically taking care of players so they don't get sick or hurt," she explained, "and also giving them a great experience to match the amount of time and money they've invested into your game."

Motion sickness is one of the major worries about VR and one of the most common causes, Goode says, is turning. So devs must ask whether or not they need players to turn in their games, or whether having the players control their own motion by physically turning – naturally limiting the speed at which they turn – will be better.

"Adding on-screen hands for reference is a grounding technique; it ensures that players don't get dizzy when going up and down stairs or turning around quickly," she added.

"You want to avoid large actions and focus on smaller interactions to avoid accidents. Also, if players are untethered with a wireless headset, they'll feel like they can wander everywhere. If you encourage them to control their movements, a lot of players tend to try to naturally walk forward. Keep your environments quite small so they don't walk halfway across the room."

11. DEVS COULD BE DOING MUCH MORE

Scottish Games Network founder Brian Baglow believes that the industry could lose revenue to other sectors in future.

"We're still rescuing princesses, collecting coins, blowing shit up and shooting people in the head with ever-more photorealistic detail," he said. "The bigger opportunity is to look at interactive media as a transformative technology that is changing every creative industry – and we're kind of ignoring it.

"When TV, film and so on decide they're going to take interactive media seriously, they're probably going to approach a digital design agency, not a games developer. But agencies don't bring the creativity, passion, originality and spark that we're really good at.

"Our audience has grown. Everyone out there is a potential gamer. The biggest hobby in the UK is knitting. But who's made a knitting game? We've not yet explored how games can affect the way people engage with politics, healthcare and fitness, or education. We can do more."

12. NO ONE KNOWS WHAT THEY'RE TALKING ABOUT

Indie dev James Parker interspersed his popular talk with a puppet, The Wise Old Games Owl, satirising anyone that claims to know everything about the games industry.

The owl's predictions – such as 'nothing will go wrong if you bet your business on a *Clash of Clans* clone' – had the audience laughing, but Parker had a point to back up the comedy.

"Predictions like this are never predictions, they're just observations of emerging trends," he said. "No one knows what they're talking about. No one predicted the success of *Minecraft*, or *Flappy Bird*. And if you copy what's successful, you're already too late."

He added that studios still have to follow trends to an extent, and that issues can often be attributed to following trends too early or too late. But, he said, not knowing the future is a good thing.

"It means we all have a lot more control over our destinies," he said. "When everything rests on a coin toss, you can follow your best ideas rather than go with the crowd."

> ***"No one predicted the success of Minecraft. And if you copy what's successful, you're too late."***
>
> James Parker, Ground Shatter

13. DEVELOPERS AREN'T TESTING THEIR GAMES EARLY ENOUGH

Usability experts urged devs to seek feedback on their work as soon as possible.

They argued that many developers make too many assumptions about how gamers will play their titles and what they will understand – despite the fact that some studios have seen testers take as long as 20 minutes to work out how to start their game.

"Some people go into usability testing when their game is finished waiting for an amazing pat on the back, and when they don't get that, it's too late to do anything," said Lumo Developments' Steve Stopps.

"The magic happens when you make developers watch people play their games. Just telling people what's wrong, just giving them the paper reports, doesn't work."

Ground Shatter's James Parker gave a highly entertaining talk with The Wise Old Games Owl, a puppet satirising attitudes in the industry

14. THREE THINGS YOU NEED TO BE A ONE-MAN BAND

Indie developer Nicoll Hunt offered advice on how games makers can operate as a one-man business, discussing the three pillars of time, money and skills.

Hunt said: "You will always be the bottleneck for your development so you need as many hours as possible."

He also advised "heavy rationing" of Twitter, Facebook and email usage, and recommended crowdfunding as a good option for funding a one-man studio.

"You have a smaller need for money so you can ask for lower targets," he said. "Alternatively, consider freelance work."

Hunt said a one-man dev's skills become more important than ever: "With no one to fall back on, you need to be better at everything you suck at. You don't need to be an expert, but you do need to be competent."

15. IT'S TOUGH TO COPYRIGHT GAMES

Perhaps something that studios already knew, but Newcastle University's reader-in-law Daithi Mac Sithigh offered some insight into why this is so difficult.

"In the present day, it's not just about understanding what legislation and case law says about the position of games and intellectual property," he said. "It's also important to take into account app store review guidelines – the 'real' law.

Main: Medical illustrator Cilien Kearns gave examples of how gaming technology can be used to advance healthcare and fitness

Above: Tigerface Games' Kate Ho was a member of the BAFTA Scotland Panel on diversity, an issue she stresses is "not just about gender"

"European courts still struggle with what games are in terms of copyright law. They're software but they also have artistic elements. And there are different copyright laws for software and for everything else, so your art might be protected but the rest of your game might not."

The legal expert said that, rather than copyright and trademarks, devs might be better suited to seek protection from the law of 'passing off'.

"This is based on convincing courts that you have goodwill in your product, someone is misrepresenting their product and this is causing damage to you," he explained, pointing to the example of TopShop selling T-shirts with Rihanna's image, which could be misconceived as official merchandise.

He also recommended informal means of protection: studios supporting each other when identifying clones and promoting genuine games.

16. F2P GAMES HAVE TO GRAB PLAYERS FROM THE START

DeltaDNA CTO Chris Wright revealed that retention rates on free-to-play games are lower than a lot of people might think.

"Up until about five years ago, we all believed that people who bought our games played them to death," he said. "What we actually find through analytics is the vast majority don't get past their first session.

"If you can get 50 per cent of your players to come back and play a second session of your game, you're doing well. Many lose 80 per cent of their players in the first session."

Wright also warned that some developers are pushing players away too early.

"Not all players are the same: some of them want a lot of help at the start, but some don't," he said. "They don't want long tutorials, they want to get into the game."

He also warned that including monetisation messages too early – particularly before players understand all of a game's mechanics – they will not play any more.

17. NETWORKING IS VITAL TO INDIES

During a panel hosted by Microsoft, various Scottish indies offered advice on how to forge valuable connections.

Mogworks' Donald Sutherland encouraged devs to attend any events they can, adding: "It's not just about what you'll learn on the day, it's about the people you'll meet and where that can lead."

> ***"Talking about diversity isn't a comfortable place to be. I'm waiting to be attacked."***
>
> Gina Jackson, NGSA

Pixel Blimp's Isaac Howie-Brewington said: "Tell people what you're doing, even if it's not done. The people we spoke to worked with us towards a launch window that would be optimal for us based on our type of game, which is information we wouldn't have had if we hadn't shown the project at an early stage."

Geared Kids' CEO Kasim Qureshi urged new developers to keep trying, even if their debut title struggles: "When a lot of people release their first game and its doesn't have the success they originally hoped, they can be disheartened by that. It certainly happened to me. But you have to learn from the mistakes you made and try again, not just hope to make it big straightaway."

18. WE NEED TO PULL TOGETHER TO MAKE OUR INDUSTRY MORE INCLUSIVE

UKIE CEO Jo Twist closed out Develop Live with the BAFTA Scotland Panel on diversity.

Entitled 'Changing the ratio', the panel called for the games industry to pull together to make it a more inclusive and welcoming place.

Twist said there was currently a "real problem" when talking about the issue, as the right research was not in place to display all the facts. She highlighted reports from Creative Skillset and IGDA presenting different figures on the number of women in the industry, making it difficult to know just how big the issue is. (*see Develop's research on pg.6*)

Though the discussion often focused on women, the panellists explained that diversity also meant different ages and backgrounds. As panelist and Next Gen Skills Academy acting MD Gina Jackson explained: "It's about having different voices, different social experiences and different backgrounds".

Tigerface Games' Kate Ho added: "It's not just about gender".

It was also noted that the debate isn't limited to just games, the issue is also present in the VFX and animation sectors.

"If you look at Silicon Valley, it's amazingly multicultural and welcoming to a whole set of different people," said Jackson. "It means conversations can be had, clashes of ideas can be had."

Jackson said one of the key issues she faced when approaching the topic of diversity was the air of fear when speaking out.

"Being on this panel isn't a comfortable place to be, talking about this isn't a comfortable place to be," she admitted. "I'm waiting to be attacked."

Jackson also stated when writing articles online, she would never read the comments through that same fear. She added that to tackle the issue of diversity in games, the responsibility needed to be shared amongst everyone, rather than expecting others, or indeed just women or minorities, to do it. ■

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Decades of **distinction**

UK studio Distinctive Developments celebrates its 20th anniversary this year – and its story often mirrors that of the wider games market. **James Batchelor** finds out more

DISTINCTIVE DEVELOPMENTS IS one of many UK studios that have thrived on the mobile market – but not just in the age of smartphones and tablets.

The 20-year-old firm's first major success was its *3D Pool* series, released with I-Play between 2004 and 2007 and boasting sales of more than 3m units. It was also responsible for ten years worth of mobile *FIFA* games, as well as its own *Football Kicks* – a free-to-play title that hit No.1 in 67 countries and racked up 23m downloads.

In fact, since switching to mobile development, Distinctive has achieved more than 50 million sales.

But, given that the studio first opened doors in 1994, its first foray into games development was a little more traditional.

"Keith Birkett and I worked at Krisalis Software in Rotherham for several years developing for home computer platforms such as Amiga, Atari ST, Acorn Archimedes and early 32-bit consoles such as 3DO," says managing director Neil Little.

The Distinctive team has made a name for itself with sports games

"We could see that there was about to be a big shake up in the industry as 3D consoles started to appear and our plan was to take full advantage of this revolution.

"Being in our early twenties, we had a healthy disregard for the risks we were facing. However, it didn't go entirely to plan. We should have had a third founding member but unfortunately he backed out at the last minute and we found ourselves starting a studio with two programmers but no artist."

FIRST PORT OF CALL

The duo's debut project was from Probe Entertainment – later an Acclaim studio – with Probe's Fergus McGovern entrusting Little and Birkett with converting arcade fighter *Primal Rage* to the 3DO. The pair proved to be so efficient, they ended up also handling the Atari Jaguar and Sega Saturn ports.

Little remarks on how different it was back then: "It seems crazy now but these machines had a total memory of 2MB to hold all of the code, graphics and audio. I remember when we first compiled the code for *Primal Rage* it came out at 4MB and that was without any graphics or audio. It then had about another 25MB of beautiful stop-motion animated dinosaurs. We literally spent months squeezing the code and graphics down to fit.

"Compared to now, where we have phones with 2GB of memory and 128GB of storage, it is a world apart. Having said that, as developers, we still always want to do more than what the hardware can cope with but ultimately it is much easier to work on current devices than ones from 20 years ago.

Little adds that the same applies to team sizes: "In 2000, we had grown to a team of eight people and you really needed about 20 people to develop a good quality title within a reasonable time frame. With all of the middleware, asset stores and brilliant tools we have now, recent graduates look at me like I'm crazy when I say this but it was a very painful reality that we faced at the time."

> ***"We had the opportunity to get into an industry at its inception. We never looked back."***
>
> Neil Little, Distinctive

MOVING TO MOBILE

Distinctive continued to create console titles, but the arrival of the new millennium saw the rise of alternative markets, which Little and his team were keen to take advantage of.

"There were various emerging platforms," he says. "The dot-com boom was in full swing, interactive TV set-top boxes started to appear, but most interesting of all was mobile phones' ability to run Java code.

"I saw this as an amazing opportunity to get into an industry at its inception and grow the business as the market grew. So we focused 100 per cent on mobile development in 2001 and never looked back."

The studio enjoyed relative success in the years that followed, but it was the rise of Apple's now dominating mobile marketplace that truly defined what Distinctive is today.

"When Apple opened the App Store, and the opportunity arose to self-publish games on smartphones, we thought long and hard about our strategy," says Little.

"We decided we should use our experience of developing sports games and look for popular sports that were being underserved by other developers and publishers. This resulted in *Rugby Nations* and *Hockey Nations*.

"Rugby is an inherently difficult sport to simulate so our main goal has always been to develop the most accurate and enjoyable rugby experience possible. Obviously, you have to continuously improve the visuals and audio as the devices improve but the main focus has always been the gameplay."

APPY DAYS

The success of the App Store led to a new era for Distinctive. Prior to the store's launch, the studio operated purely on a work-for-hire basis, occasionally dabbling in its own IP such as the *3D Pool* games. The digital mobile market changed not only the studio's priorities, but also how it operated and what skills the team had.

"When the barriers to self-publishing came crashing down we had to focus much more on marketing, user acquisition, analytics and so on," explains Little.

"Not only that but you also have to carefully manage the risks involved in self-publishing, because as an independent developer employing 35 people it's critical to keep the money flowing in. Naturally, this change to self-publishing resulted in new roles and new processes being created."

Little adds that the team even created its own technology to power its games: "We're called Distinctive and we aim to be distinctive in the games we create and the way we make them. Having our own Phoenix engine allows us to perfect those areas that are important to us, allows us to be responsive to new devices and platforms and it also allows us to keep control of the entire production process – thereby de-risking the projects.

"Unity and Unreal are both amazing and have unlocked massive amounts of creativity that would never have been realised otherwise. However, sometimes you have to zig when everyone else is zagging."

Success with the likes of *Rugby Nations* has made the studio far more independent, no longer reliant on the contracts Little and his co-founder Birkett started their journey with back in the '90s.

In fact, less than half of Distinctive's projects now are work-for-hire, and Little says there's good reason for this.

"The challenges of running a pure work-for-hire studio are well understood. You must agree clear expectations at the outset, plan the milestones so you have money when you need it, make sure the publisher pays on time and, once finished, get the staff started on a new project as quickly as possible.

> ***"We decided to look for popular sports that were underserved by other developers and publishers."***
>
> Neil Little, Distinctive

"The most difficult part of this is in setting expectations. You have to find ways to communicate what you are going to be building other than just the written word. Draw sketches, make paper mock-ups and refer to other games, films, images and so on. And just go over it time and time again. Because, even when you do all of this you still find that the client expects something different to be delivered. But, hopefully, by doing all of this you can at least minimise those differences."

Not that he regrets the work-for-hire partnerships that helped Distinctive Developments grew over the years. Little is particularly thankful of the close relationships the studio established with the likes of Atari, Acclaim, Namco, Sega, Capcom, Eidos, I-Play, Player One and iFone – to name by a few.

But it was deals with publishing giants Electronic Arts and Square Enix that Little was most thankful for: "We worked with EA on mobile versions of *FIFA* for ten years and it was a real pleasure to work with such a passionate group of people who really cared about making the best possible game.

"Most recently, over the last couple of years, we've been working closely with Square Enix on a reboot of *Championship Manager* as a mobile free-to-play game. They have been brilliant to work with."

It's not all been smooth sailing. Little says, without naming names, that some of the studio's most awkward partners have been non-games firms.

"Games companies understand how games are made," he says. "However, once you start working with companies outside of the games industry you start to realise how many assumptions you make when communicating your concepts and ideas. Only by learning to spot these assumptions and being able to clearly explain how games are put together do you start to successfully work with non-games partners."

Rugby Nations 15 – shown in these work-in-progress screenshots – is the latest entry in what has become Distinctive Developments' flagship franchise

THE NEXT 20 YEARS

So what of the future? With two decades of experience under its belt, Distinctive is confident of a healthy business for many years to come, building on the success of its most popular sports titles.

Along with new entries in the *Rugby Nations* series, the firm is due to release an American football game by the end of the year – a project that has been assisted by Patrick Willis of the San Francisco 49ers.

And Distinctive will continue its partnership with hockey star Patrick Kane for more titles in that sport.

"We also have several projects in pre-production now, which will expand our sports portfolio further and utilise the new tech we are currently developing," teases Little. "It's a bit too early to talk about them yet but you can expect some exciting games from us in the first half of 2015."

With a strong presence in mobile, would Little ever consider going back to consoles?

"My opinion has always been 'never say never'," he says. "However, what we like about mobile development and publishing is the ability to reach billions of people right around the world – where games that would be considered niche on console can reach millions of players."

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Your monthly guide to the best career opportunities in games development worldwide

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PlayStation's Agostino Simonetta joins ID@Xbox team
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Véronique Lessard on Ubisoft Quebec's recruitment drive
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What Next Gen Skills Academy means for you

Develop speaks to Culture Minister Ed Vaizey to find out what the new industry-led academic initiative has to offer future generations of developers

by Alex Calvin

LAST MONTH A consortium of games companies, including the likes of SCEE and Reflections, joined forces to create the Next Gen Skills Academy.

The group secured a £6.5m investment from the UK Commission for Employment and Skills (UKCES) to educate a new wave of developers, animators and visual effects artists.

"The Next Gen Skills Academy is a network of further education colleges," the minister of state for Culture and Digital Economy Ed Vaizey told *Develop*. "It's going to provide places for students and apprenticeships. It's a mix of private and public money to really provide a step change in terms of the skills needed in the industry."

All very well and good, but there are already a number of similar schemes out there. So what is so new and interesting about this initiative?

"It's going to provide a quality guarantee and a focus," says Vaizey. "It's going to mix all the relevant skills you need for the gaming industry."

"We have a very good ecology of games courses. Creative Skillset does a very good job making sure kids go to courses and get the skills they need for jobs. Next Gen does what it says on the tin, it's taking this up to another level. It's a great brand name that people will soon identify with. It's narrow focus of working with key employers; you are not just putting in cash money but also cash in kind in terms of work placements, expertise and skills."

> ***"We're bringing industry and employers together to deliver the right skills."***
> Ed Vaizey, Culture Minister

This scheme is industry-led, ensuring the course is constantly updated so that employees are aware of what is required of them in the ever-evolving world of games development.

"It's important for people to understand that it's flexible, so it can be constantly updated, and that's what was needed," Vaizey says.

"In terms of skills and what you get in the digital industries, the people who come to me to express concerns about that, their number one concern is about the opportunity for students to work with employers.

"The concern is that you come out of further education with a degree or qualification that is great on paper but because you haven't experienced what the employer needs by sitting down with them being in the office, you don't necessarily have the right skillset from the get-go. It's really important that employers are involved and have a strong input into the curriculum."

And to take part in the scheme, all attendees need to do is register their interest online.

"At the moment the frameworks aren't written," Vaizey says.

"We're looking to launch next year. People interested can sign up on our website to say they're interested and we're going to work with 120 employers from games and visual effects to deliver those frameworks. Then we'll commission the providers, who students will be embedded with.

"We're not reinventing the wheel, it's about bringing the industry together with employers to make sure we're actually delivering the right skills." ■

MOVERS AND SHAKERS

This month: Xbox, IGDA, Northern Ireland Screens and Hansoft

SONY DEV RELATIONS EXEC JOINS XBOX

MICROSOFT ■ Former Sony developer relations executive **AGOSTINO SIMONETTA** has moved to Xbox.

Simonetta worked at Sony Computer Entertainment Europe for five years, holding the role of senior account manager at PlayStation's developer relations team.

He also played an influential part in setting up Sony's PlayStation Open Days across the UK and Europe, giving developers the chance to speak with the platform holder about getting their games on on the market and learning the ins and outs of self-publishing, even on non-Sony platforms.

Simonetta has now left Sony however, and is serving as third-party account manager for Microsoft's own indie initiative, ID@Xbox, a similar role to the one he held at its rival.

He announced his change of job over Twitter, saying: "Very happy to announce I have joined the @ID_XBOX team in Europe. Looking forward to carry on working with the amazing indie devs community."

Simonetta joins a program led by ID@Xbox director Chris Charla. Games to be accepted onto the program to date include *Goat Simulator*, *Fruit Ninja Kinect 2*, *Dungeon of the Endless* and *Superhot*.

IGDA ■ The Scottish branch of the International Game Developers Association (IGDA) has appointed a new chairman.

Former chair Luke Dicken (*pictured*) has stepped down to join social gaming firm Zynga in San Francisco.

In preparation for his departure, he has been replaced by the organisation's secretary, Abertay University student **ANDREW MACDONALD**.

In an open letter on IGDA's website, Dicken said: "Going forwards, I will be taking a back seat advising the remainder of the Board of IGDA Scotland, and I will remain on that Board until I actually leave the country. "

HANSOFT ■ The software firm has announced two new senior execs to its management team.

MARK DE VISSER, formerly of Borland and Red Hat, joins as chief growth officer, working on corporate communications, demand, product marketing and community relations. Meanwhile, **JOHN MAY** (*pictured*) becomes chief revenue officer, leading global sales. May previously worked at Rally and Agile.

"We are thrilled to be able to add such talented executives at our company to build on this demand and to further drive Hansoft's growth," said Hansoft CEO Patric Palm.

NORTHERN IRELAND SCREEN ■ The government-backed agency for the creative industries has announced its new digital executive.

DONAL PHILLIPS will be supporting the creative industries involving gaming, e-learning, web and mobile.

Phillips has previously worked for Jagex and EA.

"It's a great pleasure to be invited to join Northern Ireland Screen and help replicate the work that it has done with the film and TV industry in the digital sector," he said. "I'm especially excited about helping producers deliver world class experiences putting Northern Ireland on the global stage."

UNITY ■ **JOHN RICCITIELLO** has replaced David Helgason as the CEO of middleware firm Unity.

Riccitiello was already a member of the Board of Directors, having joined in November.

Helgason will continue to work at the firm as executive VP in charge of strategy and communications.

"I'm so proud of everything Unity accomplished in the last decade but now it's time to look forward to an excellent future," said Helgason.

"Our mission is an important one, so I'm incredibly happy that John has agreed to lend his formidable experience to the role of CEO at Unity."

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www.futurlab.co.uk

FuturLab is a nimble and ambitious Develop 100 studio based in a homely and close-knit studio in Brighton & Hove on the south coast of England . It has developed and published nine PlayStation titles in the space of four years; most recently *Velocity 2X* and *Surge Deluxe* for PS4 and Vita.

RECRUITER **HOT** SEAT

With Ubisoft Quebec now hiring, recruiter **Véronique Lessard** tells Develop what the studio is looking for

What differentiates your studio from other companies?
Ubisoft Quebec has been growing by leaps and bounds in recent months. In the almost ten years since the studio set up shop in beautiful Quebec City, we've worked on several major Ubisoft franchises, including *Assassin's Creed*, starting with *Brotherhood*.

We've earned our spurs and are ready to take things up a notch. In fact, we recently announced that Ubisoft Quebec will now be in charge of developing new generation triple-A games, including forthcoming chapters of *Assassin's Creed*.

It is against this backdrop of growth and development opportunities for new games on major Ubisoft franchises that the roughly 360 talented staff at our studio are currently working.

The studio is small enough so that almost everyone knows each other, which makes it a very friendly place to work. The human resources team works closely with each employee to ensure their professional development at the company.

At Ubisoft Quebec, continuing education and career advancement are very important to us. Having such a vibrant studio of this size means each employee can have their own career profile and lots of great development opportunities.

How many staff are you currently looking to take on?
Ubisoft Quebec is currently seeking about 30 new talented employees, including a number of senior staff to fill strategic positions on current and future projects.

For example, we're looking for a creative director and an animation director to launch the development of one of our upcoming projects. The positions currently available at Ubisoft Quebec can be viewed on our website: **www.quebec.ubisoft.com**.

What should aspiring new recruits do with their CV to make sure they get an interview?
Keep it simple. That's the best way to get my attention. When I get lost in a CV because there are too many colours or drawings, I quickly move on to the next one.

I often advise people to send me a short message on LinkedIn telling me they've applied. This lets me pay special attention to their CV. But it's important not to bombard the recruiter with too many follow-up messages – that could have the opposite effect.

Who is the best interviewee you have ever had?
In my opinion, anyone who is well prepared, who shows interest in the company and passion for their work, is likely to be a good interview candidate. It's important to be yourself. People who are real and act naturally in an interview immediately get my full attention.

And what's the worst interview you've ever had?
Saying negative things about former employers or even Ubisoft is not a winning formula. Bringing your mother or girlfriend to an interview isn't a great idea either. And that has actually happened.

What advice would you give for a successful interview at a studio like Ubisoft Quebec?
Be yourself and show passion for your work. Interviewers want to know who you are and if they would like working with you.

> ***"Bringing your mother or girlfriend to an interview isn't a great idea. And that's happened."***

You should also be sure you're well prepared and find out about the company so you can talk about it during the interview.

If Ubisoft Quebec has recruited internationally, what was the process like?
Over the years, we have hired more than 50 people from outside Canada. Currently almost a third of the team comes from outside Quebec. What matters to us is talent, regardless of where in the world the person is. Ubisoft's vast global network is an undeniable advantage for our recruiting. And in this age of social networking, I can say that international recruiting is done almost exclusively in this way.

Once new overseas recruits have fallen in love with Quebec City and the team that we have here, we make every effort to welcome them and ensure that their arrival goes as smoothly as possible: assisting new employees with work permits, relocation, integrating families, etcetera.

BIO
Name: Véronique Lessard
Title: Recruiter
Developer: Ubisoft Quebec City
Country: Canada
www.quebec.ubisoft.com/en

How have your recruitment needs changed at Ubisoft Quebec as it continues to expand?
Our evolving projects have led us to seek high-level candidates who have worked on big triple-A productions, all specialties combined.

We are lucky to have a strong and talented team in place here. Bringing on new talent will only enhance the quality of our up-and-coming projects.

Why should developers join a studio like Ubisoft Quebec when being indie and self-publishing have become so much more accessible to them now?
With Ubisoft Quebec, you have an opportunity to work on world-renowned, new generation triple-A games at a studio that values each individual and is part of a strong international network.

At just two-and-a-half hours from Montreal, Quebec City is a great place to live on your own or with a family. It features the charm of a European city with a North American vibe.

For us, employees come first. They are central to all our decisions. So we do everything we can to keep our employees happy and support their professional growth.

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GET THAT JOB

Development specialists offer advice on how you can bag that career leap

THIS MONTH: QA LEAD

GOODGAME'S SINIKKA COMPART on the skills needed to be a quality assurance lead:

What is your role at the studio?
I am the team lead at Goodgame Studios' quality assurance department.

My team is in charge of ensuring that our games deliver the highest quality of user experience and run as seamlessly as possible. This involves a variety of tasks ranging from the co-ordination of test runs, documenting our findings and reporting them to the developers. Being a game tester is very different from just playing a game, because you have to be very conscious of technical details and understand the various underlying game mechanics in order to be able to identify the flaws.

How would someone become a lead in QA?
There is no ready-made career path in quality assurance. Personally, I've always had a passion for computer games. After university I worked at a recording studio where we produced soundtracks, sound design and voice-over for games. But I wanted to get closer to the product, which is why I started as a QA intern at Goodgame in June 2012. I then became a QA technician and am now team lead for the department.

> ***"Testers need to understand why a gameplay element has been developed."***
> Sinikka Compart, Goodgame

What qualifications and/or experience do you need?
A real passion for games and a distinct interest in how a game works are essential for anyone working in quality assurance. Game testers of all levels need to understand why a gameplay element has been developed in a certain way and where potential problems could arise.

If you're interviewing someone to join your team ay Goodgame, what do you look for?
We are not looking for just any trained personnel but for a wide range of gamers, programmers and generally intelligent and curious people with diverse backgrounds. The ideal new Goodgamer is very motivated and relates strongly to our games and to the company. A cultural fit within the team is just as important as professional experience and degrees. We want people who thrive on challenges.

Why choose to follow a career in your field?
If you're a QA technician, you never have a boring day at work, because the range of tasks is really diverse and every day is different. Working directly on the games is very rewarding too, especially since we are in charge of improving their quality, which means that we make our games more fun and enjoyable for our users.

Goodgame Studios currently has quite a few open positions in the Quality Assurance department, find more details at:
www.goodgamestudios.com/job-listing

If you've got job advice to share, email **cchapple@nbmedia.com**

Employee HOT SEAT

Flaunt's executive producer **Andrew Pearce** talks about landing a job at the character animation studio

What is your role at the studio?
I'm one of the executive producers at Flaunt. We meet clients, listen to their goals and objectives, and get excited about their projects. Then we pitch. This is the most fun part of the job, where anything is possible. I work with a small team of directors, idea generators, concept artists and whoever is right for the brief.

Flaunt is all about charm and humour, whereas our sister company Axis Animation's work tends to be grittier and more cinematic. Our work is stylised, and as such, we have a greater requirement for illustrators and look development artists. So I spend a lot of my time hunting for new creative talent.

Some projects require us to partner up with other service providers. A good example of this came about as a result of an interest in live action requirements from a client, which fits well with the skill sets of our new sister studio AxisVFX.

How did you get your current job?
I've always been into the new business side of animation, so when the opportunity presented itself I made the step up from the role of producer.

What perks are available to those working at the studio?
The greatest perk has to be the wide variety of projects we get to work on. I think that gaming is the most dynamic field in the arts right now, with seismic changes happening every year. The brands are fantastic, the teams are world-class. Clients we've had this year include Microsoft, Sony and Amazon.

Our studio is known for variety too, working with multiple clients over a year. There's a great cross-pollination of techniques; sometimes a solution for a low-budget project challenge will help on a blockbuster trailer.

I'm a big fan of digital art, so a perk for me is working with some of the best concept artists and illustrators in the world.

Name: Andrew Pearce
Title: Executive producer
Company: Flaunt Productions
www.flauntproductions.com

What is the recruitment process like at your studio?
We'll look at as many reels as we can. We're gradually expanding our business, which means some specific roles come up within the press and on our website, as well as keeping our eyes and ears open in a general hunt for the best talent.

> ***"Our studio is known for variety, working with multiple clients over a year."***

What was your own interview like?
I'd already worked with Axis as a client, so it was not really an interview process as such, but more of an introduction and discussion to see if we both liked what we saw. Axis gave me the big tour of their previous premises, I met the partners and the teams I'd potentially be working with and we went from there. That's how it happens sometimes in this industry.

Describe what the atmosphere is like at your studio.
The studio was founded by four artists who still run the place. That really comes through in both the work and the atmosphere; there's a genuine creative passion amongst everyone here.

The studio has an extremely low turnover of staff. A client returned to us with a game sequel after a four year hiatus, and I was able to put almost exactly the same team on to the job.

SKILLS AND TRAINING

This month: Edinburgh Napier University

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W: www.napier.ac.uk

Edinburgh Napier's graduates have gone on to pick up jobs studios such as Rockstar North

EDINBURGH NAPIER UNIVERSITY is home to numerous courses that can help equip aspiring games industry professionals with the skills they need to make a career in their chosen field.

Courses available include Games Development, Sound Design, Digital Media, Computer Science and Software Engineering. Students can also take on a module in games engineering on their respective course. According to stats provided by the University, student satisfaction on its games development course stood at 100 per cent in 2014, while all graduates also found employment from the last year group.

In fact, of the students who graduated this year, three went on to PhDs while another three picked up jobs at studios such as *Grand Theft Auto V* developer Rockstar North.

Speaking to *Develop*, Edinburgh Napier lecturer and games development degree program leader Ben Kenwright says the university's computer programming courses focus on the techniques required in today's industry to develop and produce "high quality" games.

"The study programmes cover essential fundamentals of computer science and broader computing fields such as user interfaces, physics-based animation, console development, highly parallel execution environments and artificial intelligence," he says.

The educational institution has partnerships with companies such as Nvidia, which awarded it Nvidia Teaching Centre Status, and also partners with Sony on its academic development programme PlayStation First, providing the university with access to PlayStation dev kits and software. On top of this, Kenwright says there are also numerous high specification PCs in its game lab to ensure developers have the right tools at their disposal.

Kenwright adds it has a focus on equipping pupils with interchangeable skills that can be adapted to an ever-evolving games industry, and if needed, other sectors too, all through in-depth courses and its close partnerships with leading tech firms.

"Edinburgh Napier University carries out research alongside established researchers in collaboration with leading companies from industry," he says.

"The Edinburgh Napier University game technology group includes research into advanced physics, graphics and artificial intelligence, such as, fluid dynamics, hair, soft-body, and the creation of interactive computer-animated characters for complex dynamic environments."

As well as work placements, students get the opportunity to work on games during their studies as part of the course. The Game Engineering degree is designed to offer students with a deep understanding of both the theoretical and technical aspects behind software engineering in the games space.

"The students study a broad range of techniques, such as, interactive graphical applications, as part of both small and large projects," he says.

"Smaller projects involve the implementation of different specialist components while larger projects involve the development and implementation of a publishable interactive game or demo."

Edinburgh Napier was awarded Nvidia Teaching Centre Status, while it has also partnered with Sony on its PlayStation First programme

INFO

Courses: BSc (Hons) Games Development, BSc (Hons) Sound Design, BSc (Hons) Digital Media, BSc (Hons) Computing Science, BEng (Hons) Software Engineering

Established: 1992 (Granted University status)

Country: UK

Staff: Kenny Mitchell (Head of Research for Disney UK), **Emma Hart**, **Kevin Chalmers** (Program Director), **Benjamin Kenwright** (Program Lead)

Notable Alumni: Mark Miller (Rockstar North), **Adrian Guzinski** (Rockstar North), **Scott Rankin** (Rockstar North), **Lukasz Iwanski** (Codeplay), **Kenneth Benzie** (Codeplay), **Jason Grey** (Disney Research UK)

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Epic discusses what's in store for the latest version of its powerful game engine
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Building on strong foundations

Games development has become more than just core game design; an entire infrastructure often needs to be built behind the scenes. **Craig Chapple** asks the experts about the back-end technology available, and why considering it matters

THESE DAYS, NEARLY all games are online in some capacity, and while single-player gaming is still in demand, multiplayer interactivity, whether that be competitive, co-operative or just social, is becoming increasingly popular.

Together with a modern development model that champions iterative game design and persistent updates on the fly, particularly on mobile, just working on the gameplay is only part of an increasingly complex development process. Many developers now also have to consider how the game is supported behind the scenes.

A myriad of companies have emerged over the years to help build up a game's infrastructure to handle the title itself, with many services companies coining the term 'back-end as a service' (BaaS). But what does that even mean?

BACK TO BASICS

"Back-end as a service can be a confusing term," says John Griffin, CMO of one such UK-based services provider GameSparks.

"In GameSparks, it means providing developers with everything they need from the server-side on a pay-as-you-go basis.

There are a number of key things here. The first is the scope of what a back-end as a service should offer. Effectively, it should give the developer a full set of server-side components so that they can plug their game into it easily, saving a lot of development time.

> ***"It's about the need to cope with fragmented distribution, now there are so many platforms."***
>
> John Griffin, GameSparks

"Secondly, it should give the developer control over the server-side components so that they can do whatever they want and not be limited by our interpretation of what a particular component should do. It should be flexible, allowing them to build on what the core offering already provides. Next, it should abstract the server and underlying network tiers so that the developer does not have to worry about scalability, and finally, it is about

GameSparks' John Griffin (above) says back-end technology can be crucial for success, and services like its own allow developers to focus on making games

Above: Kumakore CEO Henry Yeh

Right: Uber Entertainment's mobile game Toy Rush using PlayFab's back-end tech

Far right: GameSparks' back-end services were used in Norsfell's mobile strategy title WinterForts: Exiled Kingdom

making a sophisticated server-side capability affordable and tied into the success of the game in question."

Kumakore CEO Henry Yeh further elaborates that BaaS is currently the highest layer of abstraction for games developers to be able to access the cloud. He explains there are numerous levels on the technology stack for server services, where at the lowest level developers can either use their own physical serviers or redeploy onto a cloud service such as Azure or Amazon Web Services.

"There, you directly pay for the instances you deploy, so regardless of how much usage you use, you're paying a set price for 'uptime'," he says.

"Then you have the PaaS's, such as Heroku, which is the next layer above the cloud, and they actually deploy on the bottom level cloud services, but they manage those services so that a developer only pays based on how much cloud service they use. Finally, the BaaS's don't require any level of server programming knowledge, as they expose APIs for the developer. For example, a generic BaaS like Parse could be thought of as an API to expose MongoDB."

Firms in the space offer support for game features including leaderboards, achievements, virtual currency and goods, inventory management, asynchronous gameplay, push notifications, analytics and player chat.

Though developers could potentially build most of this themselves, Yeh believes as players focus on the core gameplay experience, it is not always worth a studio's time investing in their own technology given the array of service providers on the market.

"They get user love from building a great game," he says. "Some developers recognise this key factor is the one that allows them to turn their passion into a successful business. No user ever chose a game for its back-end solution."

BACK TO THE FUTURE

As games have become more complex, even in just the last few years, so has the infrastructure behind them. Griffin says there has quietly been an "architectural revolution" in the way games are made, particularly in the mobile space.

He says games are becoming dependent on server-side components, driven by the increasing importance of social interaction – something the console platform holders have taken notice of with their new games consoles – as a driver of engagement, retention and player acquisition.

"It's about the evolution of business models, where in-game revenue streams, like advertising and the sale of virtual goods, have become more important," states Griffin.

> ***"Sometimes they do this part too late and end up with a lesser product due to a lack of knowledge."***
>
> David Xicota, Gamedonia

"It's about the need to cope with a fragmented distribution environment, now that there are so many different platforms and stores, some of which are walled gardens and all of which set version control and release overhead challenges. And it's also about a mindset shift from product thinking – where the target was unit sales, and the game is largely in its final form at release – to service thinking, where the target is active customer relationships, and where the game evolves significantly post-release."

David Lee of Sleepy Giant, which operates back-end technology Fofofum, says changes in the field have come from engines such as Unity making it easier for any kind of developer to make a game, the growing number of solutions to maximise revenue and user engagement.

He claims that while part of this started off as simply 'analytics', data alone "provides no value", with companies now also offering a way to auto message users through push notifications or emails.

"The areas I see further growth in would be around more complex automation for marketers since they need to know which ads are bringing in the most return on investment and now with so many systems in place, they need a more robust automation engine that can take multiple event sources and handle more complex rules than what is out there now," he says.

Griffin says such architectural trends are making life more difficult for developers. As well as working on the core gameplay, they now need to understand the server-side technology if they want to be successful.

"Good back-end technology becomes very important – it's not just about delivering the server-side features, it's about how that's achieved," he states. "You need reliable, scalable, flexible, well-maintained server-side tools, without distracting too much time and resource away from the tasks that matter most – making and managing great games.

"Do developers get this? The more established certainly do. I think it makes things much harder for indies though as it means they need to have server-side skills as well as client-side, and many of them do not have this experience. GameSparks exists to help indies and level the playing field by bringing enterprise grade server–side capability to them on an affordable basis."

A NEW WAY TO DEVELOP

David Xicota, CEO of Gamedonia, adds that big developers have known the importance of good back-end tech for a long time, but believes many indies have missed the value of the tech.

"Sometimes, they do this part too late in the development process – when they already have the game client ready – and end up with a lesser product due to a lack of knowledge in setting and maintaining this infrastructure," he says.

"It's the hard way to realise that back-end is as relevant as the front-end. Right now, the back-end requirements have become standards everybody expects."

PlayFab CEO James Gwertzman says as more titles move to a game-as-a-service, the future of development belongs to those who can operate their live games successfully.

"Operating games effectively is hard, very hard," he says. "Doing it well requires back-end services, tools for your operations team that support all the various roles involved – customer service, product management, marketing, game design, data analysis, etcetera – and the know-how to actually use those tools successfully."

Lee counters, however, that he doesn't believe indies have the money to consider their back-end technology thoroughly, instead building something internally or using systems like Parse or Kinvey to give them 20 per cent of what they need.

For larger developers on big budgets, it's often a vital piece of their success.

"I have seen games fail because of the inflexibility of the platform back-end side not working properly or being flexible enough," says Lee.

A LICENCE TO BAAS

Given the importance of building a good back-end, should developers choose to licence it or build their own? Yeh says the BaaS is best used for companies that need to iterate quickly on their games and get features out, and likens it to game engines, where many developers opt for third-party tools instead of creating their own.

"It is not that a developer is not able to build their own tech, but rather, it is not an efficient use of resources," he claims. "And, when you are developing games as your business, developing new tech may be a fun engineering exercise but not an intelligent business practice."

Xicota says consideration should relate to how such a service will add to the final product. While BaaS engineers work exclusively in the field, he says it's something that's difficult to achieve with an inexperienced team.

He accepts however that multi-disciplined teams could build their own in-house solutions, but as Yeh says, also references how devs are increasingly adopting third-party engines.

> ***"I have seen games fail because of the inflexibility of the platform back-end side not working properly."***
>
> David Lee, Sleepy Giant

"Would it make sense that every studio had to code its own game engine? I don't think so," he states.

"That's why we're seeing top quality engines thrive. So, why would you want to develop your own back-end when professional and flexible solutions exist in the market?"

Griffin says rather than one or the other, developers can use both. He explains that GameSparks allows studios to use specific parts of its services that can be augmented into their own existing back-ends.

"It's no longer one or the other," he states. "For complex games with huge player bases running into the many millions, the costs of server-side technology can run high, not to mention the cost of development and the amount of time it takes.

"I think most companies should look at what they can get from an external supplier now, especially as they can be integrated with existing internal capabilities." ■

EARLY STARTERS

THOUGH WORKING ON the game design is naturally of the utmost importance when starting to develop a game, when should creators start building up, or at least considering, their back-end technology?

"For all but the simplest of games, I think developers should start considering the back-end as early as possible," says GameSparks CMO John Griffin.

"A game's economy and the social integration with it are fundamental to a game's design. Understanding the architecture of the game and what the server can bring in terms of maintenance cost reduction is something that needs to happen upfront. The earlier the better."

PlayFab CEO James Gwertzman agrees, stating: "As early as possible, especially if the developer is building a live title, such as a multiplayer game, or free-to-play game, where the core gameplay loop depends on online features."

He goes on to use the example of why it's important from his days back at casual games developer PopCap.

"We were working on a social game and I remember we had a 'buy now' button in the game that didn't do anything for months and months – it didn't start working until right before the game went live, and that meant that we couldn't try out and test the core monetisation loop until the very end of development."

Kumakore CEO Henry Yeh, however, says that back-end considerations depend on the game and features, but admits games should always be designed with monetisation in mind from the start.

"It is not a good idea to design a game first and then add a monetisation strategy retroactively," he states. "Therefore, once the game design is completed and you've decided your MVP launch plan, that would be a good time."

Above: Gamedonia CEO David Xicota

Below left: Sleepy Giant's Fofofum technology has been used to support titles such as Orcs Must Die Unchained

Gearing up for mobile VR

Samsung's Gear VR is coming, and Oculus is helping developers prepare with its new Mobile SDK. Max Cohen, vice president of mobile at Oculus, tells **Will Freeman** what to expect from the kit

Oculus VP of mobile Max Cohen (above) says developers should aim to innovate when working on VR projects, and create an app, much like the Oculus Cinema (main), that can enrich the experience

AS THE TECH world eyed the revolutionary virtual reality headset Oculus Rift, waiting for the still-coveted consumer release information, Samsung's Gear VR headset was unveiled with something of a surprise at the beginning of Septmeber during its Samsung Unpacked event.

The platform is to arrive with the public before Rift. A hardware partnership between Oculus and the mobile giant had been long-rumoured, but few would have predicted Gear VR debuting ahead of the company's core device, particularly when social networking giant Facebook had just spent some $2 billion on acquiring the start-up.

Taking the form of the mobile slot-in headsets so popular with crowdfunding entrepreneurs, Gear VR is also expected to go on public sale before Sony's Project Morpheus, potentially at the close of 2014, giving it an early run at the virtual reality market and giving developers some idea of consumer anticipation for such a device, and whether there's money in it.

And a clutch of studios such as *The Room* outfit Fireproof Games are already unveiling titles such as *Omega Agent* for the Gear VR, while others including Climax Studios are describing the headset as superior in experience to the first-gen Rift.

It's all an encouraging sign for those unsure about developing for a mobile virtual reality system, where questions are asked and eyebrows raised around control input and interactive function issues.

The headset makes use of the 5.7 inch Quad HD super AMOLED display in Samsung's Galaxy Note 4, and reportedly inspired *Doom* lead programmer John Carmack to join Oculus as its chief technology officer back in August of last year.

And the Gear VR headset has been keeping Carmack plenty busy. Together with Max Cohen, Oculus' vice president of mobile, and a team of coding specialists snapped up into close to a dream team for the technological revolution that seems to be underway at Oculus, Carmack has been building the Gear VR's software development kit.

Develop caught up with Cohen to learn more about the SDK, what it offers developers, that latest improvements in VR development and how it welcomes teams to the potentially bewildering world of crafting virtual reality projects for the Android platform.

Firstly, broadly speaking, what have you tried to offer developers with the Gear VR Mobile SDK? Was there a particular theme in terms of what you wanted it to deliver for devs?
Our goal was to do the heavy-lifting that helps get virtual reality running smoothly on the Note 4, while leaving developers the flexibility to tweak settings in order to extract the best performance they can get.

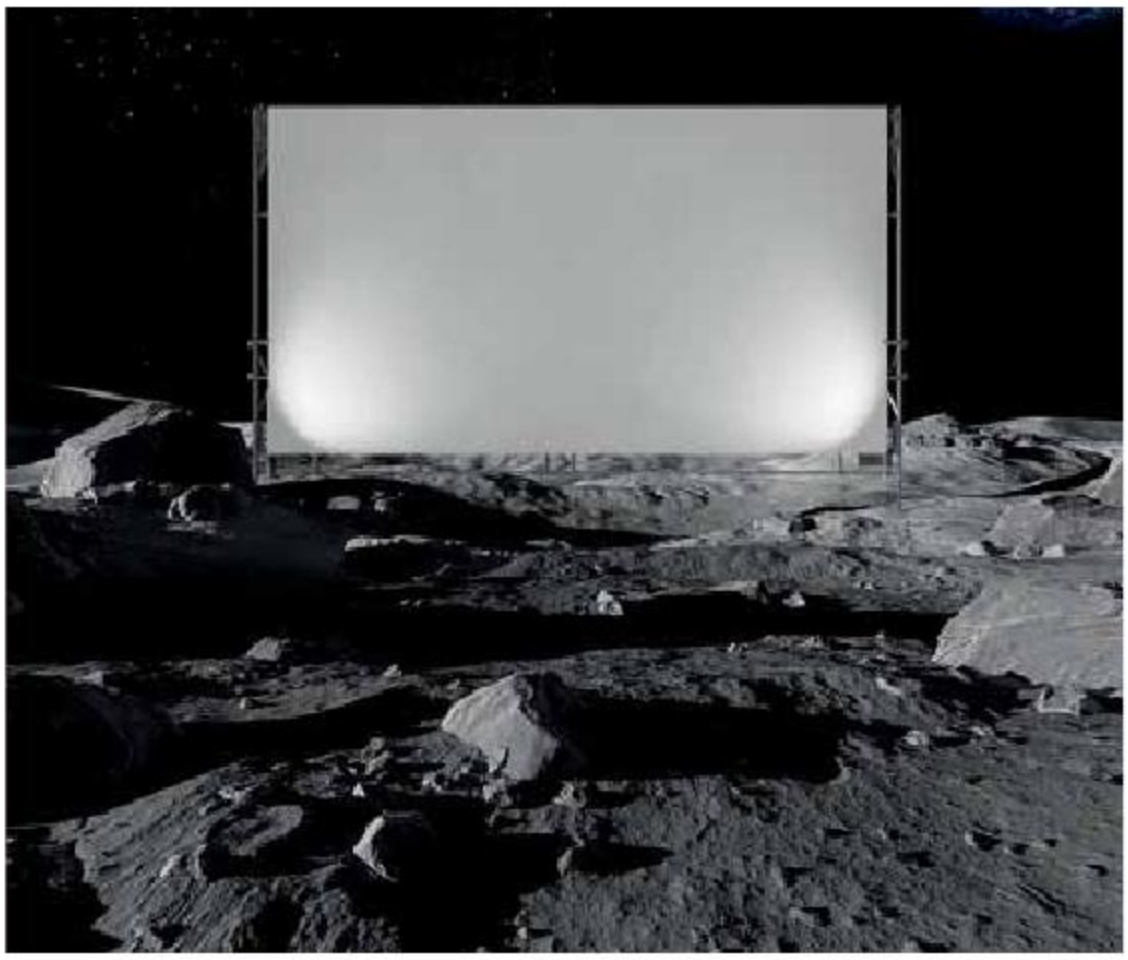
For the Samsung Gear VR to be successful it absolutely has to have the support of the development community – and to that end the SDK is designed to help developers create successful applications.

What specific opportunities and challenges does a mobile VR platform offer, and how have you addressed them in the SDK?
The biggest challenge and opportunity lies in one's ability to balance the capabilities of the mobile devices with the thermal load and power consumption associated with them.

Mobile devices definitely have the processing and rendering performance to create compelling virtual reality experiences. However, utilising 100 per cent of all this power is not straightforward.

The SDK allows developers to set different locked clock speeds which gives them maximum control over the application performance while keeping the application power and thermal-constrained.

These types of limitations won't be going away any time soon – if you look at the entire size of a Galaxy-class phone versus just a high-end PC graphics card, you can see why there are some design constraints on mobile VR. So beyond that, we manage what we can – we have functionality in the SDK to notify users when the phone is heating up and automatically reduce settings a bit to allow continued use.



The Oculus cinema (left) puts users in a virtual movie theatre that acts just like the real thing, though the setting can be more outlandish if needed

And how familiar will it be? What have you done to make sure it's accessible and developer friendly?
If you're familiar with developing for the Oculus PC SDK, you won't find many surprises in the Mobile SDK. There are various customisations, but they're pretty easy to understand and deal with. We've also had the Mobile SDK in private preview for the last six months, so we've had time to take lots of feedback on board and iterate on areas that needed improvement.

What about the Mobile software development kit's potential integration with other tools and middleware; is it particularly open in that regard?
A lot of effort went into supporting the Unity game engine and we are actively looking into and encouraging support for additional tools that will enable developers to create successful applications.

A number of hardware developers have also been adapting their SDKs to work with our own, so that users with other types of controllers, for instance, can still get a good experience on their app.

How has the Gear VR Mobile SDK evolved as you've been developing it? How, for example, did feedback from the developers granted early access to the SDK influence its design?
It has evolved massively. When we first put the SDK together, it was for apps running on the Galaxy S4 – then we had an S5 version, and then a 1440p S5 version, that has a similar chipset to the Note 4.

As functionality got added – such as mount-on/off detection – we had to modify the experience so that it was closer to a commercial launch; adding auto-reorientation, for instance. Of course, there was also a lot of bug-fixing and new feature additions throughout the process.

Many games developers have Oculus projects already underway for the PC. Is there support for helping them rework those games for the Samsung Gear VR? Is that even something feasible and reasonable to undertake?
Absolutely – and it's not just reasonable, but encouraged. The graphics levels will be lower on mobile, of course, but great mobile experiences can be achieved through optimised development.

We expect many developers to work on both Gear VR and PC-based solutions. Starting with mobile and focusing on the experience is in many cases the better approach because it is often easier to add eye candy than to remove it.

What has Oculus learned from developing this SDK, in terms of what it can implement into its SDKs and tools elsewhere? Perhaps there's even a broader benefit there for developers making games for the core Oculus system?
Although the mobile and PC SDK teams are separate, we continuously share knowledge with each other. Some advances, such as John Carmack's asynchronous timewarp, for example, were started on mobile and then migrated to the PC. The information flows both ways.

How, if at all, does the Mobile SDK address games developers looking to overcome the challenge of adopting the Android platform for the first time?
Developers will need to have a cursory understanding of how to make an Android app, but by using a generalised game engine such as Unity, they can have a Gear VR project up and running very, very quickly.

What about the future of the SDK? How do you expect it to evolve as it finds itself in the hands of more developers?
The team has new ideas all the time – we prototype out a lot of them, and the best ones then make their way into the developer's toolkit. We expect the development community to come up with innovative tips and tricks that can be implemented and shared with everyone.

The Oculus developer forum is another good resource for people to share their experiences and help out fellow developers. Virtual reality is at a nascent stage, and what we do in five years will seem both impossible and unrecognisable to us today. Oculus, via both the Mobile and PC SDKs, hopes to stay at the forefront of this technology at it continues to develop.

And how is the SDK made available to developers? Is it free, for example, and what license models are in place?
It's absolutely free.

Finally, do you have a piece of advice for games developers that are considering embracing creating a game for Samsung's Gear VR headset?
Think about innovative gameplay, and design an experience that is much more immersive and enriching when users are placed in a virtual environment.

Ports can be successful, but users are most delighted when they play something that wouldn't be possible on a television or a handheld device.

developer.oculusvr.com

Interfacing with users

Navigating complex systems through a clean and simple UI is one of the key aspects to an enjoyable game experience. **Craig Chapple** uncovers the tools developers have at their disposable to create their ideal user interface

KANZI STUDIO

Company: Rightware
www.rightware.com

KANZI STUDIO IS a user interface solution that has traditionally been used in the motoring industry, but is also applicable for use in the games development sector.

The tool, powered by the Kanzi Engine, is optimised for the latest mobile devices, and developers have access to 2D and 3D GPU effects, letting users implement depth-of-field and shadow maps, for example.

It can even be used to develop a full game by adding features such as physics, sounds, networking and AI.

SCALEFORM

Company: Autodesk
gameware.autodesk.com/scaleform

ONE OF THE leading UI solutions on the market, Scaleform can be used to create user interfaces for games across devices. The tool enables devs to use Adobe Creative Suite to create menus, UI elements and 2D graphics.

It also provides a library of pre-built UI components that cover uses such as check boxes, dropdown menus and text input boxes. The latest release, 4.4, includes a new ActionScript 3 virtual machine to reduce memory usage, while its redesigned rendering engine takes advantage of multiple cores.

IGGY GAME UI

Company: Rad Game Tools
www.radgametools.com/iggy

RAD GAME TOOLS' Iggy Game UI is a system for creating graphical user interfaces using content created in Flash. Developers can harness the solution to create graphics, scripting, animation and interactivity, and can be used in conjunction with authoring tools such as Adobe Flash CS5.

Features include ActionScript 3 support and performance tools such as Telemetry to track CPU usage.

The tool is compatible with mobile, last-gen and new-gen consoles, PC, Mac and mobile.

NGUI

Company: Tasharen Entertainment
www.tasharen.com

NGUI IS A USER interface system designed specifically for both the free and Pro versions of Unity, and has long been the go-to tool for users.

Tasharen's tool has full support for iOS, Android, Blackberry, Windows 8 and Windows Phone 8. Notable features include drag and drop ready-made controls and built-in localisation support.

The standard licence is available for $95 from the Unity Asset Store, though the free version, based on the last of the NGUI 2 cycle, is also available.

SKETCH

Company: Bohemian Coding
www.bohemiancoding.com/sketch

DESIGNED FOR MAC, Sketch is a useful vector-based workflow designed for user interface creation.

Features includ bitmap editing, various vector modes, a grid tool to create object grids, support for basic text lists, and ready-made iOS and web design templates. Enhancements to Sketch 3 include an improved Sketch Mirror for better resizing and scaling, improved scripting support and a more advanced export tool that allows users to simultaneously export to multiple sizes and formats.

COHERENT UI

Company: Coherent Labs
www.coherent-labs.com

COHERENT UI IS a tool that lets developers use HTML5, CSS3 and JavaScript to create user interfaces for their games.

The software provides a browser that can be embedded into a game to create heads-up displays, web browsing, in-game shops and interaction with social media sites.

As well as a multi-threaded renderer, Coherent UI can be integrated into Unity, CryEngine and Unreal Engine 4. Supported platforms include PC, Mac, Linux and mobile devices.

CEGUI

Company: CEGUI Development Team
www.cegui.org.uk

CRAZY EDDY'S GRAPHICAL user interface system (CEGUI) was first released in 2003, and supports the creation of user interfaces on multiple platforms, including Windows, Linux and Mac.

It has support for both 32-bit and 64-bit architectures, and is a flexible tool that allows developers to code their own widget renders and choose their own XML parser and script module. Games that have harnessed the tool include *Torchlight* (*pictured*) and *TUG*.

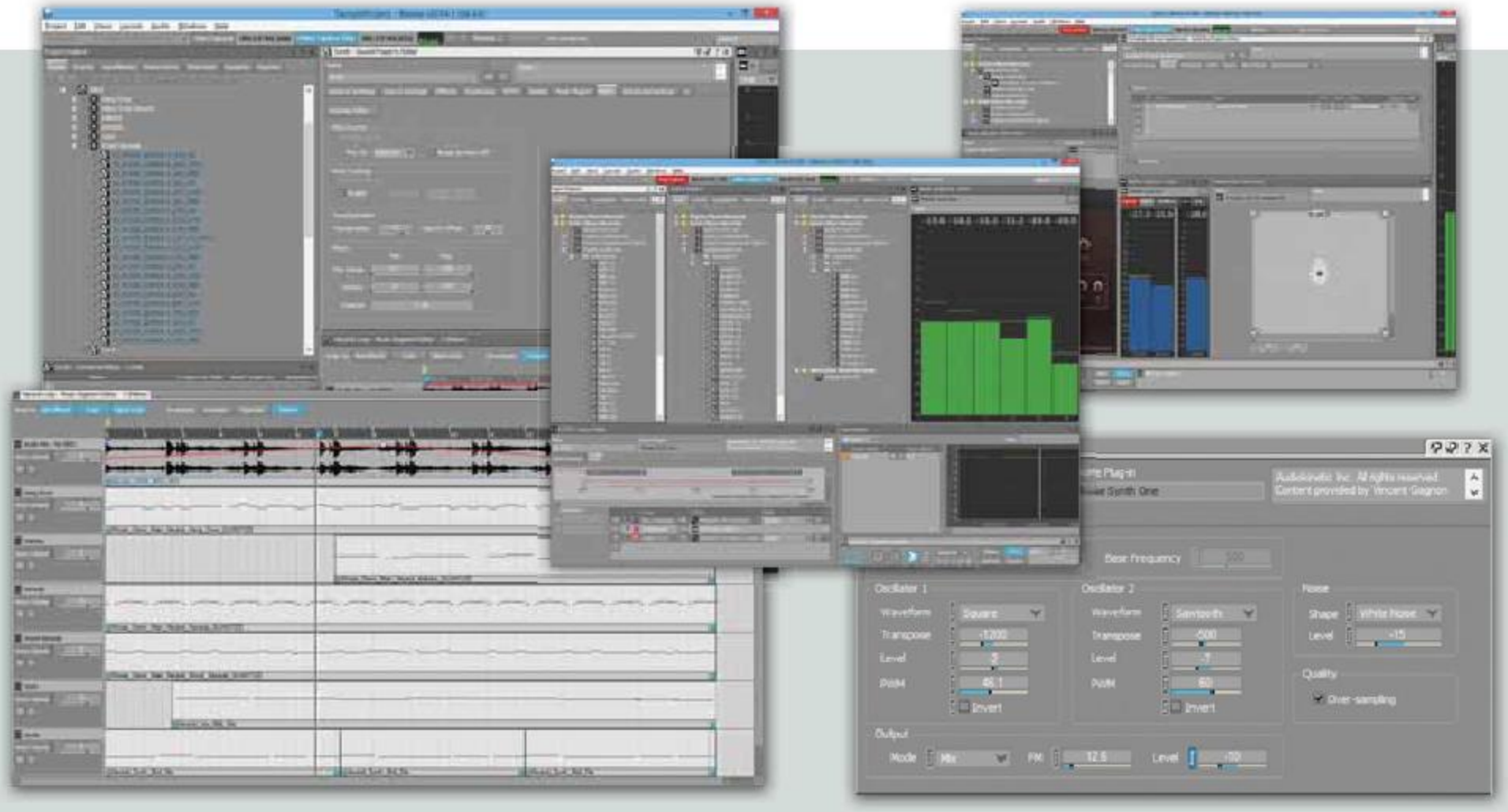
NOESIS GUI

Company: Noesis Technologies
www.noesisengine.com

NOESIS GUI USES a workflow based on the XAML tool, and is built to be easy to use for artists, without the need for extensive programming resources.

The tool is vector-based, which its creators say allows for resolution independent UIs with optimum quality, and is designed to take full advantage of multi-core processors.

Licencing options come in indie, Pro and Premium options, with Pro options costing anywhere between $495 to just under $5,000 depending on gross income and project budget.



KEY RELEASE

A Wwise investment

Audiokinetic has released Wwise 2014.1, its biggest update yet. **James Batchelor** asks why devs should upgrade

WWISE FIRST LAUNCHED in 2006, and has steadily evolved in the years that have followed. Last month, creator Audiokinetic released the newest iteration, Wwise 2014.1, confidently claiming that it is the largest update to the tool yet.

The latest version adds a plethora of new features, including MIDI support, built-in game parameters and interpolation, LFO and Envelope modulators, High Pass Filter and support for surface controllers. It also allows users to control up to 255 different outputs.

But it's not all about the new bells and whistles; Audiokinetic says this update is designed to make Wwise the most comprehensive sound engine available to developers across the globe.

"Audio teams will find a lot of creative control and flexibility," VP of products Simon Ashby tells *Develop*. "With those new features at hand – on top of all previous Wwise features – we're now at a place where we could soon hear new genres of soundscapes and untapped artistic directions.

"Most of the new features are direct requests from our users. We collect all the feedback we can and prioritise new features that way. For 3D audio features like the Mixer plug-in framework, the request came from some of our partners and from observing the trend with regards to all the different flavours of 3D audio out there."

The upgrade is free for established users, but there's more to 2014.1's appeal than the lack of a price tag and a slew of new functions.

Ashby says: "There are so many great features, and many of them are removing dependencies with game code and programming which consequently reduces the production costs and enhance the game experience. It's a win-win situation like this that makes it easy to justify the upgrade.

"Experienced users will love Wwise 2014.1. Actually, we already received lots of positive feedback from them while they were trying the Beta versions we've made publically available. When they discover they can hook up their MIDI or Mackie controllers to Wwise and assign any properties and shortcuts to their controller's buttons, knobs and faders, they'll discover a new workflow with Wwise that will enhance their productivity and creativity."

SOUND ADVICE

Audiokinetic is keen to get more people using its software than ever before, recently launching the Wwise online certification course, which teaches developers how to use the sound engine.

The firm has updated Cube, the Wwise Sample Project and the Wwise Project Adventure Handbook – educational material designed to get new users up to speed with the software. There are also plans to revise the official tutorial videos, particularly those that focus on the first hours of using Wwise.

Interestingly, the newest release of the sound engine has already been attracting more than just games developers, with companies involved in museum installations, special events, experimental development and more all checking the software out for themselves.

This is because Wwise 2014.1 is built around "workflow and creativity", according to Ashby.

"Designers will spend more time crafting innovative sound design concepts connected to the game and less time spent in their DAW fixing static sounds," he says.

"It's easier than ever to go from 'I've got this idea' to trying it out a few minutes later without any programming dependencies or complicated pipeline modifications. That's the great win with this new version of Wwise." ■

What is it: The latest version of Audiokinetic's sound engine, introducing more new features than any update before it
Company: Audiokinetic
www.audiokinetic.com/products/wwise

Audiokinetic's Simon Ashby (above) says Wwise 2014.1 (main) includes a host of new features such as MIDI support and the ability to control up to 255 different outputs

HEARD ABOUT

A revolution in audio

John Broomhall pauses to reflect on how game audio has progressed over the years

Games developers now often use established high-end film facilities to record game audio, such as Abbey Road (main)

MORE THAN TWO decades ago, a certain pro-audio magazine ran an article about game music and sound. It turned out you needed a Mac running a MIDI sequencer, some modest stereo editing software, and a Kurzweil K2000. It cast the game audio world of that time as awash with 8-bit quality sound, populated by somewhat less than 'pro' practitioners.

Understandably, it confidently forecast a time when the industry would 'grow up' and technical standards for fidelity would blossom to 'CD quality'. The inference seemed to be – stand by, all you 'proper' engineers and studios with your Neve and SSL desks and fancy outboard – at some point this is all coming your way. Eventually these inexperienced bedroom audiomancers will no longer cut it. Ouch.

And yet the reality was that whilst talented game audio folks might have been aspiring to Hollywood sound and clutching at the coat-tails of film composers, their world was mostly lo-fi, low-budget and the pro-audio fraternity looked down its nose at them. How have things changed.

Who knew that recording technology itself was set to radically change, becoming more accessible than ever before? Creating superb master quality assets in less than top-end 'pro-audio' conditions was soon to become the norm. Arguably, at the advent of the now ubiquitous all-digital project studio, extremely software-savvy game audio creatives were well placed to harness the new recording tech – as at the same time they found their game tech making leaps and bounds.

Things moved fast. It became possible to ship games with believable 3D audio worlds replete with credible acoustic modelling, boasting occlusion and obstruction and a plethora of other DSP treatments. It wouldn't be long before games would be replaying dozens of 3D audio channels rendered in surround, all running live via a sophisticated virtual digital mixing desk; an absolute revolution in interactive audio.

A NEW BEAT

These days, the game audio business happily uses established high-end movie talent and facilities for what it actually needs from them, and it's commonplace for game scores to be recorded at Air or Abbey Road, with foley created at Shepperton.

Meanwhile, many of the original game audiophiles are alive and well, creating or overseeing top-class interactive audio content. Many, when confronted with that brave new 'sink or swim' world of high-end digital sound for games, actually took to the water with aplomb. And now the world of pro-audio and post-pro is deeply interested in game audio.

Being part of recent conference events like Game Music Connect and Sensoria Pro, both playing to packed houses, certainly reminds me that videogame music, sound and dialogue projects are now seen as highly desirable gigs. What's more, in some instances, folks from other industries may even aspire to some of our best game sound design and perhaps be grabbing at the coat-tails of our composers. In a recent Game Music Connect two-hour special on Classic FM, Howard Goodall commented on the unique creative opportunities game composers have, compared with their cousins in film and TV. Not to mention the growing importance of today's games scores for jobbing orchestral musicians.

So, if this just happens to find you in crunch, harassed, sleep-deprived and not feeling quite as positive as your first rush of passion for game audio – or maybe not so much enjoying the particular title you're working on right now – take heart. Actually, you have a quality problem.

Game audio has truly come of age and there are now armies of people out there who dream of breaking into our industry – and with an indie sector blossoming for game audio and VR tech shining on the horizon, the future looks very bright. ■

John Broomhall is a game audio specialist creating and directing music, sound and dialogue. Find him at: **www.johnbroomhall.co.uk**

UNREAL DIARIES

What's New in UE4.5?

Epic Games leaps forward with the largest update since the engine's launch in March

EPIC HAS SHIPPED Unreal Engine 4.5, the fifth and most radical point release since the introduction of the UE4 subscription and community source code initiative.

Major upgrades include new rendering features, animation retargeting and automatic C++ hot reload for Visual Studio and Xcode. In addition, the new Unreal Motion Graphics user interface editing system is out of preview state.

SOFT SHADOWS

Two significant rendering methods are now available: ray-traced distance field soft shadows and screen-space subsurface scattering.

Through the former, shadows can display well-defined edges up close which soften with increasing distance. This dynamic shadowing process works by tracing a ray through mesh distance fields to light, allowing for soft area shadows with sharp contacts.

With UE4's new Subsurface Profile shading model, screen-space subsurface scattering makes creating realistic skin materials and other awesome effects even more satisfying, carrying out skin calculations at the screen resolution level.

SMART ANIMATION

With 4.5 comes the release of animation retargeting which enables animations to be reused amongst characters of vastly different proportions. Through retargeting, animated skeletons retain their proportions when using animations from differently shaped characters. The benefit of using animation retargeting is increasing the number of unique characters without having to create an entirely new set of matching animations, which can seriously cut down on animation memory budget.

QUICK AUTO-COMPILE

Automatic C++ hot reload in 4.5 significantly improves iteration time. This feature empowers users to make changes to gameplay code, recompile, and update the game during play. The reload process takes only a few seconds after compiling in Visual Studio or Xcode, and the results can be seen immediately after.

Adding new classes and properties, extending Blueprints using code, and hybrid prototyping between C++ and Blueprints are even more enjoyable actions now.

EASY UI EDITING

The new Unreal Motion Graphics UI system is enabled by default and ready for wide use. Getting started with UMG is as simple as creating a new Widget Blueprint and building out UI in the editor from there.

Included in the 4.5 release are many other notable features, such as auto lightmap UV generation and a new Media Framework system that supports streaming video on UI widgets and textured objects in levels.

Finally, 4.5 contains a number of usability and learning enhancements, a new tutorial system and new game templates for advanced vehicle and twin stick shooter games. ■

Unreal Engine 4.5 includes new features such as ray-traced distance field soft shadows (see above)

UPCOMING EPIC ATTENDED EVENTS

Montreal International Game Summit
November 10th to 11th
Montreal, Quebec

East Coast Dev Tour
November 12th
Montreal, Quebec

East Coast Dev Tour
November 14th
Boston, Massachusetts

*Email **licensing@epicgames.com** for appointments and sign up for Epic's newsletter at unrealengine.com.*

Epic is hiring. To find out more visit: **epicgames.com/careers**

FOR MORE SUCCESS STORIES, VISIT: UNREALENGINE.COM/SHOWCASE

MADE WITH MARMALADE

Chrome sweet Chrome

Marmalade's Chromecast extension will enable devs to quickly and easily add casting functionality to their mobile games

Marmalade's Mark Barwise (top) and Tony Waters (above) believe Chromecast proves the potential of the multi-device future for gaming

WITH MOBILE GAMING becoming more advanced, companies are looking at new ways to bring their titles from smart devices to the central pillar of any living room: the TV.

While a number of microconsoles offer access to mobile libraries, Google has a more unique solution in the form of Chromecast. This affordable device plugs directly into the HDMI port of your TV and receives movies, TV, music and games from any smart device, whether it's Android or iOS.

It's a product that has certainly impressed cross-platform middleware firm Marmalade.

SCREEN SMARTS

"The Chromecast is proving to be an incredibly popular device for getting content onto your TV, thanks largely to its inexpensive price point and ease of use," says Marmalade's head of SDK Tony Waters.

"Up until now these devices have primarily been used for streaming media but we see a great opportunity for developers to leverage its capabilities for gaming."

Creative director Mike Barwise adds: "Chromecast really proves the potential of the multi-device future for gaming, where iOS and Android devices fluidly mix side-by-side with a shared display. It shows off the versatility of the mobile platform, developing from being a powerful device for playing games on the move to enabling larger living room experiences."

Not only does Chromecast give developers a larger screen to play with, it lends itself to new multiplayer possibilities with each gamer using their own smart device to play. However, there are still important things to consider when designing for the new tech.

"Due to Wi-Fi transmission and the current specification of the hardware, the platform is currently better suited towards non-'twitch' experiences," explains Barwise.

"If you decide to go the route of more turn-based play, creating ways that your game can give players something to do or strongly look forward to when it isn't their turn keeps engagement up.

> ***"The Chromecast has proven to be an incredibly popular device for getting content onto your TV."***
>
> Tony Waters, Marmalade

"How the players use the mobile device in relationship to the shared display is one of the key questions to iterate upon early. The privacy that individual screens enables opens gameplay opportunities, but this can come at the risk of actually segregating players to the detriment of the shared display at which point you may as well be playing a regular game.

"Related to this is the need for interface synergy between the sender and the receiver apps – if players are glancing between displays they want to be able to quickly absorb information in a consistent way."

Already known in the industry for its suite of middleware that make developing cross-platform mobile games easier, Marmalade will soon be adding Chromecast support to its offering.

READY TO CAST

Games run through Chromecast depend on both a mobile sender application and a receiver on the Chromecast device itself. While the latter is optimised for video by default, devs can create their own versions using HTML5 and JavaScript.

To make this process simpler, Marmalade is creating a cross-platform 'wrapper' SDK extension around the Chromecast APIs on both iOS and Android.

"This allows a developer to write the Chromecast 'sender' app as a cross-platform Marmalade application, rather than having to write two separate applications, or handle the Chromecast APIs for the two different platforms separately," explains head of R&D Nick Tuckett.

The Chromecast extension will soon be made available to Marmalade users. You can register for updates via **www.madewithmarmalade.com**.

Why Marmalade matters
Coming soon, Marmalade's Chromecast extension lets devs add functionality for Google's device to their mobile games
www.madewithmarmalade.com

UNITY FOCUS

A work of art

Moon Studios' Gennadiy Korol talks us through the development of Ori and the Blind Forest

A SURPRISE HIT at this year's E3, *Ori and the Blind Forest* is shaping up to be one of the most visually striking Xbox One games.

Developed by Moon Studios, this title stands out with its stunning graphical style of handcrafted, painted backgrounds and characters, inspired by the works of Studio Ghibli, as well as animated classics *The Iron Giant* and *The Lion King*.

Ori and the Blind Forest is being developed using Unity – but, the studio tells *Develop*, that's not how work on this project began.

"The very early prototype of *Ori* was actually developed in Construct with only two people working on it," says Moon Studios CEO and co-founder Gennadiy Korol. "But when it became clear that we wanted to go bigger, Unity was the natural choice. We were able to port the Construct prototype in just a week and *Ori* immediately felt at home there. We were basically able to transform Unity into the perfect, fine-tuned '*Ori* production engine'."

The game's unique structure – what Korol describes as "a full HD 2.5D 'painting comes to life' title" – has made it a very challenging project for Moon Studios.

"There are gigabytes of handcrafted, painted and animated art with insane levels of parallaxing that is required to run at a solid and consistent 60fps without any loading screens, ever," says Korol.

"On top of that, we needed to deliver sophisticated in-engine cinematics with crossfade transitions between shots, lush interactive environments, GPU simulated water, motion blur, and much more.

"Since *Ori* is a 'Metroidvania' style game, we had to allow our designers to build the levels in the most flexible way. They needed one big bird's eye view of all scenes in the game and the ability to easily rearrange levels as LEGO blocks on a big world map.

> ***"Don't be afraid to modify and extend Unity to do exactly what you want, how you want."***
>
> Gennadiy Korol, Moon Studios

"Meanwhile, our artists needed to have a 2D art pipeline that would allow them to efficiently build, preview and animate all of our art directly in the editor. We needed to hide all the complexity of the thousands of shader permutations, as well as to do heavy editor and build time optimisations required to make the game run efficiently."

GROWING THE FOREST

Part of the solution was to develop a new multi-scene editing solution that allowed artists and designers to load and edit multiple scenes simultaneously. This also formed the basis of *Ori*'s cinematic tools, solving additional challenges in that area.

Moon Studios even had to shift work on *Ori* to Unity 5.0 in order to maintain the solid 60fps experience it envisioned.

"It's hard to imagine an engine that was so extensible and exposed so much through a very well designed set of APIs, but thanks to this we could build a production pipeline highly tailored and optimised for the type of game *Ori* is and its precise production needs," says Korol.

"Thinking back, we were able to implement crazy things like our multi-scene editing solution back in 2012. And before Unity supported text format, we almost ended up implementing our own text format for assets and scenes. It's simply insane, but that goes to show how powerful and extensible Unity is."

For new Unity users, the Moon Studios boss offered the following advice: "Don't be afraid to modify and extend the engine to make it do exactly what you want and how you want it. Learn to write custom inspectors and editor tools. It's the best investment you can make while developing your game. And Unity is simply the best engine for this."■

Ori and the Blind Forest
Developer: Moon Studios
Publisher: Microsoft Studios
Platform: Xbox One, Xbox 360, PC
www.oriblindforest.com

Moon Studios boss Gennadiy Korol says his tech team had to be incredibly inventive with Unity to achieve the visual impact of Ori and the Blind Forest

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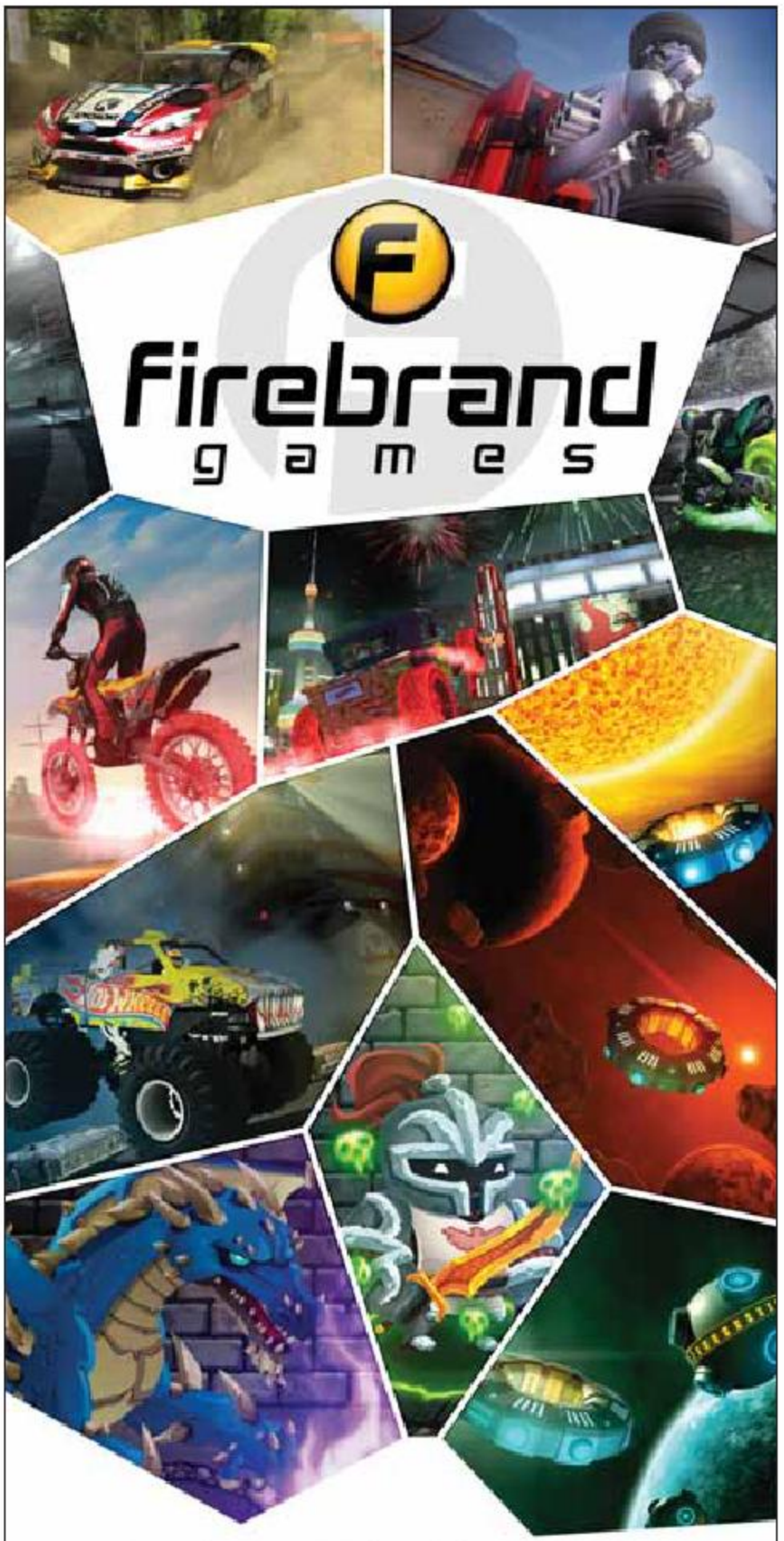

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UK

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W: www.speech-graphics.com

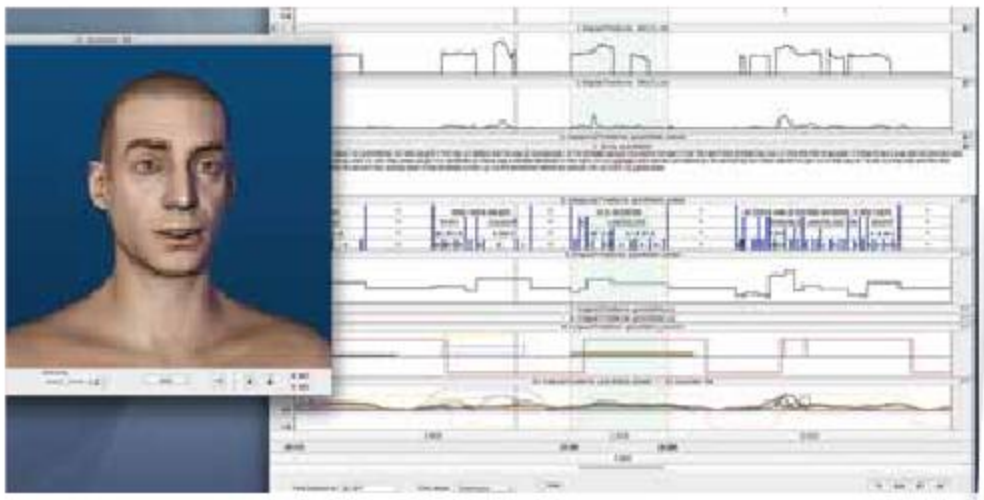
SPEECH GRAPHICS OFFERS a solution for creating facial animations from just the audio being used.

The technology can be used across a variety of characters, such is the broad genre and creativity of the games space, and also works in multiple languages. Recently Speech Graphics' services were harnessed by WB Games in its recent release *Middle Earth: Shadow of Mordor*, for which it provided more than 120 minutes of facial animation.

Speaking to *Develop*, CEO Gregor Hofer (*pictured below, right*) says the very nature of what the tech provides is what sets the company apart.

"Compared to many other facial animation solutions which may require video, mo-cap or hand keying, our pipeline is purely audio-driven and procedural, while still maintaining realistic quality," he explains.

"We are able to do this using state-of-the art speech analysis and a sophisticated internal model of physical speech behaviour. And since this is a universal model it works for any language."



Speech Graphics' tech creates facial animations based on the audio provided for characters

> ***"Our animation pipeline is purely audio-driven and procedural, while still maintaining realistic quality."***
>
> Gregor Hofer, SG

Co-founder Michael Berger (*below, left*) adds: "Our IP is based on fundamental scientific research that describes how the face needs to deform to produce certain sounds over time at certain intensities. This core IP combined with the know how of different animation pipelines and facial rigs that we built up over several projects makes us ideally placed to tackle any future facial animation challenges, and is something that cannot be replicated."

Hofer says Speech Graphics' tech is based on a combined 20 years of R&D into speech technology and computer animation, and was originally built as part of a triple-A project.

Moving forward, Berger states it plans on extending its animation services by providing studio tools to give devs broader control over the production pipeline and the ability to generate animation themselves. Speech Graphics will then provide a supporting role during setup.

"In addition we have begun providing custom joint animation services with a leading motion capture studio, using Speech Graphics techn for speech animation, with performance capture controlling the rest of the character, resulting in a high-end solution ideal for cutscenes," says Berger.

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TOOLS SPOTLIGHT

This month: **Cocos2d-x**

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E: contact@chukong-inc.com
W: www.cocos2d-x.org

COCOS2D-X IS A free, open-source game engine built for development on iOS, Android, Windows Phone, Mac, Windows, Linux and browser.

The tool supports C++, Lua and JavaScript programming languages. As well as designed for 2D titles, recently the tool was updated to support 3D games development.

To date, the tech has been used by 400,000 developers across the globe, such as Zynga, Big Fish and Wooga. Games developed with the engine include *Brave Frontier*, *Badland*, *Plague Inc* and *Big Fish Casino*.

"We want Cocos2d-x to be the engine that breaks down barriers of cost and efficiency," says Chukong USA GM and president Lei Zhang (*pictured below*).

"Making Cocos2d-x open source creates a wide and diverse community by making mobile development accessible to all. This in turn makes the dev ecosystem more robust."

Also included is the Cocos Studio, which includes a UI editor, animation editor, scene editor and data editor.

The Cocos2d-js meanwhile is a JavaScript version of the engine that supports full Cocos2d-x functionality

> ***"We want Cocos2d-x to be the game engine that breaks down barriers of cost and efficiency."***
>
> Lei Zhang, Chukong

Cocos2d-x has been used by 400,000 developers across the globe in games such as Plague Inc (above)

with a set of simplified JavaScript friendly APIs. Code IDE meanwhile is the official IDE for Lua and JavaScript coding with the engine, supporting one-click publishing, automatic code completion and debugging.

Chunkong recently launched a new Cocos Services initiative in partnership with firms including PlayFab, Chartboost, Kochava, Vungle and Scientific Revenue. The scheme provides a single platform to access the Cocos2d-x engine, services and tools from other companies.

"Cocos Services fills the growing need for developers to integrate the technologies they need to make their games successful with the least amount of difficulty," says Zhang.

"Our partners represent the finest service providers in each of their fields, and Cocos Services has made access to these industry-leading technologies easier than ever."

In future, the firm plans on introducing more advanced 2D and 3D features, as well as polishing the workflow and adding more technology to the Cocos Services suite, with the goal to provide a platform for devs of all sizes.

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GAME DEV FAMILY TREE

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Fluid Games' founder, Simon Prytherch, was an executive producer at Codies until 2003

FLUID GAMES
2013 - Present
Notable Games:
Fluid Football
miCoach

FREESTYLE GAMES
2002 - Present
Notable Games:
DJ Hero
Sing Party

Founded by former Rare and Codemasters staff, FreeStyle Games was acquired by Activision in 2008

CODEMASTERS
1986 - Present
Notable Games:
Colin McRae / DiRT
F1

Trevor Williams, Gavin Raebum and Ralph Fulton split from Codemasters in order to form Playground Games alongside talent from a number of high profile studios

PLAYGROUND GAMES
2009 - Present
Notable Games:
Forza Horizon

Codemasters creative director Sion Lenton and CTO Chris Southall joined forces to head mobile studio SEGA Hardlight

Dan Horbury and Paul Norris worked at FreeStyle Games and Codemasters before setting up Mad Fellows

Phillip and Andrew Oliver created Dizzy for Codemasters before setting up their own company

Paul Adams worked at Codemasters and Blitz, among other studios, before founding Full Fat Games

Oxford-based studio Exient opened a Leamington Spa office in 2013

EXIENT
2001 - Present
Notable Games:
Diggs Nightcrawler

NEXT MONTH: OXFORD

2P Games boss Pawel Pieciak worked on Fluid Football

Pieciak also worked on Crazy Taxi: City Rush

SEGA HARDLIGHT
2012 - Present
Notable Games:
Sonic Jump
Crazy Taxi: City Rush

MAD FELLOWS
2013 - Present
Notable Games:
SineWave

2P GAMES
2011 - Present
Notable Games:
Bricks Trouble Origins
Ice Bricks Trouble

Pawel Pieciak left Blitz to set up his own mobile and PC games studio

Ollie Clarke wouldn't let Typing of the Dead: Overkill die. When Blitz shut he saved the game and completed its development before focusing on his own studio

BLITZ GAMES STUDIOS
1990 - 2013
Notable Games:
Yoostar 2
Epic Mickey 2: The Power of Two

FULL FAT GAMES
1996 - Present
Notable Games:
Flick Golf
Agent Dash

Following the closure of Blitz, the Oliver twins set up Radiant Worlds with former Blitz COO, Richard Smithies

Blitz's Team Lumo – creators of Kumo Lumo and Paper Titans – formed Lumo Developments following Blitz's closure

Codemasters founder David Darling set up Kwalee in 2011. Micro Machines creator Andrew Graham is on staff

Founded by four former Colin McRae and TOCA devs, BigBig was acquired by SCEE in 2007

MODERN DREAM
2012 - Present
Notable Games:
Typing of the Dead: Overkill
LA Cops

Modern Dream programmer Helena Santos worked at Blitz and Radiant Worlds before joining Modern Dream

RADIANT WORLDS
2013 - Present
Radiant Worlds is currently working on its first game

LUMO DEVELOPMENTS
2014 - Present
Notable Games:
Lumo Deliveries

KWALEE
2011 - Present
Notable Games:
Farm Fighters
Flip the Cats

BIG BIG STUDIOS
2001 - 2012
Notable Games:
Pursuit Force
Little Deviants

THIS MONTH: LEAMINGTON

In this new regular series, **Lee Bradley** charts the connections between studios in some of the UK and the world's biggest development hubs. For our first instalment, and following the latest Develop Quiz, Bradley explores the links between developers in the Royal Leamington Spa area.

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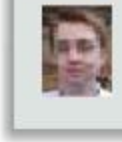
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